A: No Start

A: Introduction

A1 ATTEMPT TO CRANK THE ENGINE

Note: Verify the inertia fuel shutoff (IFS) switch is set (button pushed in). Refer to the Owner's Literature for location.

Does the engine crank?

Yes	No
GO to A2.	REFER to the Workshop Manual Section 303-06, Starting System, and DIAGNOSE the engine does not crank symptom.

A2 IDENTIFY THE TYPE OF NO START

Note: The purpose of this test step is to identify intermittent no starts in order to determine the proper repair procedure.

Does the vehicle start?

Yes	No
The vehicle has an intermittent no start. GO to Pinpoint Test Z.	GO to A3.

A3 DETERMINE THE THROTTLE TYPE

Is the vehicle equipped with electronic throttle control?

Yes	No
GO to A5.	GO to A4.

A4 CHECK THE VREF VOLTAGE TO TP SENSOR

- Ignition OFF.
- TP Sensor connector disconnected.
- Ignition ON, engine OFF.
- Measure the voltage between:

(+) TP Sensor Connector, Harness Side	(-) TP Sensor Connector, Harness Side
VREF	SIGRTN

Is the voltage between 4.5 - 5.5 V?

Yes	No

GO to A6 .	GO to Pinpoint Test C .

A5 CHECK VREF VOLTAGE TO ETBTPS SENSOR

- Ignition OFF.
- ETBTPS connector disconnected.
- Ignition ON, engine OFF.
- Measure the voltage between:

(+) ETBTPS Connector, Harness Side	(-) ETBTPS Connector, Harness Side
ETCREF	ETCRTN

Is the voltage between 4.5 - 5.5 V?

Yes	No
GO to A6 .	GO to Pinpoint Test C .

A6 CHECK THE FLASH EEPROM PROGRAMMING SIGNAL (FEPS) CIRCUIT FOR A SHORT TO VOLTAGE IN THE HARNESS

- Ignition OFF.
- TP Sensor connector connected.
- ETBTPS connector connected.
- Ignition ON, engine OFF.
- Measure the voltage between:

(+) DLC, Harness Side	(-) Vehicle Battery
FEPS - Pin 13	Negative terminal

Is the voltage less than 9 V?

Yes	No
GO to A7 .	REPAIR the short circuit. CLEAR the DTCs. REPEAT the self-test.

A7 CHECK THE RPM IN THE PCM

Note: Connect the scan tool to a reliable voltage source that is powered with the ignition in the START position (such as directly to the vehicle battery). Also verify that the vehicle battery is fully charged.

Note: Normal engine cranking speed is between 150 RPM and 350 RPM.

- Access the PCM and monitor the RPM PID.
- Crank the engine while viewing the RPM PID.

Is the RPM between 150 RPM - 350 RPM?

Yes	No
	For base engine concerns, REFER to the Workshop Manual Section 303-00, Engine System - General Information, and DIAGNOSE

GO to A8 .	difficult starting symptom. For all others, GO to JD2 .

A8 CHECK FOR CRANKSHAFT POSITION (CKP) AND CAMSHAFT POSITION (CMP) SYNCHRONIZATION

- Access the PCM and monitor the SYNC PID.
- Crank the engine while viewing the SYNC PID.

Does the SYNC PID read YES?

Yes	No
For Crown Victoria, Grand Marquis, and Town Car, GO to JF9 . For all others, GO to A9 .	GO to JD2 .

A9 CHECK THE PCM DRIVER SIGNAL TO THE COILS

Note: Test lamp bulb filament wattages vary widely. The intensity and duration of blinking depends on the test lamp being used.

- Connect a test lamp between IGN START/RUN and each coil driver circuit at the harness connector.
- Crank the engine.

Does the test lamp blink consistently for each coil driver (1 blink per engine revolution)?

Yes	No
GO to A10 .	An IGN START/RUN circuit concern is present. CHECK the condition of the related fuses/fuse links. If OK, REPAIR the open circuit. If the fuse/fuse link is damaged, CHECK the IGN START/RUN circuit for a short to ground. REPAIR as necessary. CLEAR the DTCs. REPEAT the self-test.

A10 CHECK THE FUEL PRESSURE

WARNING: THE FUEL SYSTEM REMAINS PRESSURIZED WHEN THE ENGINE IS NOT RUNNING. TO PREVENT INJURY OR FIRE, USE CAUTION WHEN WORKING ON THE FUEL SYSTEM.

REFER TO THE FUEL SYSTEM WARNING INFORMATION AT THE BEGINNING OF PINPOINT TEST HC.

FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY.

Note: While activating the fuel pump on an electronic returnless fuel system a brief pressure spike may occur.

- Ignition OFF.
- Relieve the fuel pressure. Refer to the Workshop Manual Section 310-00, Fuel System for the Fuel System Pressure Release procedure.
- Connect the fuel pressure gauge to the Schrader valve using the appropriate fuel pressure test hose and adaptor.
- Ignition ON, engine OFF.
- Access the PCM and control the FP PID.
- Activate the fuel pump to obtain maximum fuel pressure.

Is the fuel pressure within specification (refer to the fuel pressure chart in Pinpoint Test HC)?

Yes	No
GO to A11 .	GO to Pinpoint Test HC .

A11 CHECK THE FUEL PRESSURE LEAKDOWN

- Ignition ON, engine OFF.
- Access the PCM and control the FP PID.
- Activate the fuel pump to obtain maximum fuel pressure.
- Monitor the FRP.
- Verify the fuel pressure remains within 34 kPa (5 psi) of the maximum pressure for 1 minute after turning the pump off.

Does fuel pressure remain within 34 kPa (5 psi)?

Yes	No
GO to A12 .	GO to Pinpoint Test HC .

A12 CHECK THE FUEL INJECTORS FOR VOLTAGE

Note: A no start condition typically exists only if greater than half of the fuel injectors are without voltage. Check at least 2 fuel injectors, 1 on each bank on V type engines.

- Ignition OFF.
- Disconnect 2 fuel injectors.
- Ignition ON, engine OFF.
- Measure the VPWR voltage at each fuel injector harness connector.

Is the voltage greater than 10 volts?

Yes	No
GO to A13 .	REPAIR the open circuit. CLEAR the DTCs. REPEAT the self-test.

A13 CHECK THE FUEL INJECTORS' ABILITY TO DELIVER FUEL

- Cycle the key several times to charge the fuel system.
- Disable the fuel pump.
- Monitor the fuel pressure gauge while cranking the engine for at least 5 seconds.

Is there a pressure drop greater than 34 kPa (5 psi) while cranking the engine?

Yes	No

The electronic engine control (EEC) system is not the cause of the no start. RETURN to Section 3 , Symptom Charts for further direction.	GO to A14 .

A14 CHECK FOR CORRECT PCM OPERATION

- Disconnect all the PCM connectors.
- Visually inspect for:
  - pushed out pins
  - corrosion
- Connect all the PCM connectors and make sure they seat correctly.
- Carry out the PCM self-test and verify the concern is still present.

Is the concern still present?

Yes	No
INSTALL a new PCM. REFER to Section 2, Flash Electrically Erasable Programmable Read Only Memory (EEPROM) , Programming the VID Block for a Replacement PCM.	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.