QE: Electronic Throttle Control (ETC) System

Note: *Diagnose and repair the following DTCs through Section 4, Diagnostic Trouble Code (DTC) Charts and Descriptions and the Workshop Manual respectively before entering this pinpoint test:*

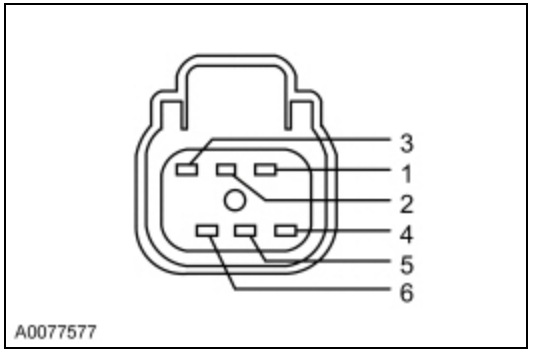
- *P0715*
- *P0720*
- *P0731-P0735*
- *P0102-P0104*
- *P0321*
- *C1165*
- *U1027*

This pinpoint test is intended to diagnose the informational powertrain control module (PCM) diagnostic trouble codes (DTCs).

The informational DTCs are the result of limited operating strategy (LOS) or failure mode effects management (FMEM) operating strategy that maintains limited vehicle function in the event of a PCM, harness, or component concern.

Circuit DTCs can be accompanied by the informational DTCs, and should be diagnosed first. Informational DTCs without circuit DTCs may or may not indicate the actual concern and should be diagnosed as a symptom.

EGR System Module (ESM) Connector



Pin	Circuit
6	SIGRTN (Signal Return)
2	VREF (Reference Voltage)

QE1 CHECK FOR DTCS

Note: *For DTCs P061B and P2106, make sure the air cleaner and air inlet are correctly seated and properly installed before continuing diagnosis.*

Are any DTCs present other than the following: P0600, P060A, P060B, P060C, P061B, P061C, P061D, P061F, P062C, P1674, P2104, P2105, P2106, P2110, or U0300?

Yes	DISREGARD the current diagnostic trouble code (DTC) at this time. DIAGNOSE the next DTC. GO to Section 4, Diagnostic Trouble Code (DTC) Charts and Descriptions.
No	For DTC P0600, GO to QE18. For DTCs P060A, P060C, P061D, P1674 or U0300, GO to QE2. For DTC P060B, GO to QE3. For DTC P061B, GO to QE13. For DTC P061C, GO to QE5. For DTC P061F, GO to QE7. For DTC P062C, GO to QE16. For DTCs P2104, P2105, P2106 or P2110, GO to QE8.

QE2 DTCS P060A, P060C, P061D, P1674 OR U0300: CHECK THE PCM FOR THE LATEST CALIBRATION

- Program the PCM to the latest calibration.
- Key in OFF position.
- Key ON, engine OFF.
- Key in OFF position.
- Key ON, engine running.
- Use the customer information to recreate the concern.
- Carry out the self-test.

Are DTCs P060A, P060C, P061D, P1674 or U0300 present?

Yes	GO to QE18.
No	The concern is not present at this time.

QE3 DTC P060B: CHECK FOR REFERENCE VOLTAGE CONCERNS

- Inspect the PCM harness for damage.
- Verify the correct operation of the sensors using ETCREF, VREF and related circuits. GO to Pinpoint Test C and follow the pinpoint test direction.

Is a concern present?

Yes	REPAIR as necessary. CLEAR the DTCs. REPEAT the self-test.
No	GO to QE4.

QE4 CHECK FOR AN INTERMITTENT CONCERN

- Clear the DTCs.
- Carry out the self-test.

Is DTC P060B present?

Yes	GO to QE18.
No	The concern is not present at this time.

QE5 DTC P061C: CHECK THE CKP SENSOR FOR CORRECT OPERATION

- Verify correct operation of the CKP sensor and related circuits. GO to Pinpoint Test JD and follow the pinpoint test direction.

Is a concern present?

Yes	REPAIR as necessary. CLEAR the DTCs. REPEAT the self-test.
No	GO to QE6.

QE6 CHECK THE CMP SENSOR FOR CORRECT OPERATION

- Verify correct operation of the CMP sensor and related circuits. GO to Pinpoint Test DR and follow the pinpoint test direction.

Is a concern present?

Yes	REPAIR as necessary. CLEAR the DTCs. REPEAT the self-test.
No	GO to QE7.

QE7 DTC P061F: VERIFY THE CUSTOMER CONCERN

- Clear the DTCs.
- Use the customer information to recreate the concern.
- Carry out the self-test.

Are DTCs P061C or P061F present?

Yes	GO to QE18.
No	The concern is not present at this time.

QE8 DTCS P2104, P2105, P2106 OR P2110: CHECK FOR DTCS IN OTHER VEHICLE MODULES

- Check for self-test DTCs in all of the vehicle modules.

Are any DTCs present?

Yes	REFER to the applicable Workshop Manual Section to diagnose the DTC.
No	GO to QE9.

QE9 CHECK FOR THE PRESENCE OF ANY MODULE COMMUNICATION CONCERNS

- Check for self-test DTCs in all of the vehicle modules.

Are any communication concerns or communication DTCs present?

Yes	For communication concerns in the PCM, DISREGARD the current diagnostic trouble code (DTC) at this time. DIAGNOSE the next DTC. GO to Section 4, Diagnostic Trouble Code (DTC) Charts and Descriptions. For communication concerns in other modules, REFER to the applicable Workshop Manual Section to diagnose the communication DTC.
No	For DTC P2104, GO to QE10. For DTC P2105, GO to QE11. For DTC P2106, GO to QE13. For DTC P2110, GO to QE15.

QE10 DTC P2104: CHECK FOR THE PRESENCE OF PCM DTCS

- Clear the PCM DTCs.
- Check for self-test DTCs.

Are any DTCs present other than P2104?

Yes	DISREGARD the current diagnostic trouble code (DTC) at this time. DIAGNOSE the next DTC. GO to Section 4, Diagnostic Trouble Code (DTC) Charts and Descriptions.
No	GO to Pinpoint Test DK.

QE11 DTC P2105: CHECK FOR THE PRESENCE OF PCM DTCS

Note: *P2105 may be set in combination with other DTCs. Diagnose other DTCs first.*

- Clear the PCM DTCs.
- Check for self-test DTCs.

Are any DTCs present other than P2105?

Yes	DISREGARD the current diagnostic trouble code (DTC) at this time. DIAGNOSE the next DTC. GO to Section 4, Diagnostic Trouble Code (DTC) Charts and Descriptions.
No	GO to QE12.

QE12 CARRY OUT A VISUAL INSPECTION

- Key in OFF position.
- Visually inspect the following for obvious signs of damage:
  - ETB
  - PCM
- Check the harness for routing, alterations, incorrect shielding, or electrical interference from other systems. Make sure aftermarket wiring is not routed near the PCM.
- Verify aftermarket equipment does not generate radio frequency interference/electromagnetic interference (RFI/EMI).

Is a concern present?

Yes	ISOLATE the concern and REPAIR as necessary. CLEAR the DTCs. REPEAT the self-test.
No	GO to QE18.

QE13 DTC P061B: CHECK FOR THE PRESENCE OF PCM DTCS

Note: *An intermittent CKP sensor or harness concern may cause DTC P061B to set. Check for intermittent CKP sensor and harness concerns.*

- Clear the PCM DTCs.
- Check for self-test DTCs.

Are any DTCs present other than P061B or P2106?

Yes	DISREGARD the current diagnostic trouble code (DTC) at this time. DIAGNOSE the next DTC. GO to Section 4, Diagnostic Trouble Code (DTC) Charts and Descriptions.
No	For Crown Victoria, E-Series 4.6L, Explorer 4.0L, Explorer Sport Trac 4.0L, F-150 4.2L, F-150 4.6L, Five Hundred, Freestyle, Grand Marquis, Montego, Mountaineer 4.0L, Mustang 4.0L, Mustang 5.4L, and Town Car, GO to QE14. For F-150 5.4L, Mark LT, and

	Mustang 4.6L Automatic, GO to QE16. For all others, CHECK for an intermittent concern with an ETC related harness or sensor. GO to Pinpoint Test Z.

QE14 CHECK THE MAP INPUT FOR AN OFFSET SIGNAL

- Key in OFF position.
- Allow the vehicle to cool down.
- ESM connector disconnected.
- Measure the resistance between:

(+) ESM Connector, Component Side	(-) ESM Connector, Component Side
VREF - Pin 2	SIGRTN - Pin 6

Is the resistance greater than 2K ohms?

Yes	For Crown Victoria, Grand Marquis, Explorer 4.0L, Explorer Sport Trac 4.0L, Mountaineer 4.0L, and Town Car, GO to QE16. For all others, CHECK for an intermittent concern with an ETC related harness or sensor. GO to Pinpoint Test Z.
No	INSTALL a new ESM. REFER to the Workshop Manual Section 303-08, Engine Emission Control. CLEAR the DTCs. REPEAT the self-test.

QE15 DTC P2110: CHECK FOR THE PRESENCE OF PCM DTCS

Note: *P2110 sets in combination with other DTCs.*

- Clear the PCM DTCs.
- Check for self-test DTCs.

Are any DTCs present other than P2110?

Yes	DISREGARD the current diagnostic trouble code (DTC) at this time. DIAGNOSE the next DTC. GO to Section 4, Diagnostic Trouble Code (DTC) Charts and Descriptions.
No	GO to QE18.

QE16 DTC P062C: CHECK FOR ABS AND WHEEL SPEED SENSOR CONCERNS

Note: *Refer to Section 6 Reference Values for the typical diagnostic reference values.*

- ESM connector connected.
- Key ON, engine running.
- Access the PCM and monitor the ISS_SRC, OSS_SRC and TSS PIDs.
- Access the PCM and monitor the VSS PID.
- Access the ABS and monitor the LF_WSPD, LR_WSPD, RF_WSPD and RR_WSPD PIDs.
- Road test the vehicle under various load conditions while comparing the PIDs. Check for signals that are intermittent or do not correspond.

Do the PID values correspond with the vehicle operating conditions?

Yes	For Explorer 4.0L, Explorer Sport Trac 4.0L, F-150 5.4L, Mark LT, and Mountaineer 4.0L, GO to QE17. For all others, CHECK for an intermittent concern with an ETC related harness or sensor. GO to Pinpoint Test Z.
No	REFER to the Workshop Manual Section 206-09, Anti-Lock Control to diagnose any ABS concerns.

QE17 CHECK FOR A TRANSFER CASE MECHANICAL CONCERN

- Stop the vehicle.
- Select 4WD Low.

Does the vehicle shift into 4WD Low?

Yes	CHECK for an intermittent concern with an ETC related harness or sensor. GO to Pinpoint Test Z.
No	REFER to the Workshop Manual Section 308-07, Four-Wheel Drive System to diagnose any transfer case concerns.

QE18 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	INSTALL a new PCM. REFER to Section 2, Flash Electrically Erasable Programmable Read Only Memory (EEPROM).
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.