

**KE2 DTC P0505, P1504, P1507 OR STARTS ONLY AT PART THROTTLE: CHECK VPWR VOLTAGE TO IAC VALVE**

**Note:** If EGR DTC P0402 was output during Self Test, diagnose it first before continuing with this Pinpoint Test.

- Disconnect IAC valve.
- Key on, engine off.
- Measure VPWR circuit voltage at the IAC valve harness connector.

Is voltage greater than 10.5 volts?

Yes	No
KEY OFF. GO to <a href="#">KE3</a> .	REPAIR open circuit.

**KE3 CHECK IAC VALVE RESISTANCE**

- IAC valve disconnected.
- Measure IAC valve resistance.

Is resistance between 6.0 and 13.0 ohms?

Yes	No
GO to <a href="#">KE4</a> .	REPLACE IAC valve.

**KE4 CHECK IAC VALVE FOR AN INTERNAL SHORT TO IAC CASE**

- Measure the resistance from either IAC valve pin to IAC valve case.

Is resistance greater than 10,000 ohms?

Yes	No
<b>For DTC P1504:</b> GO to <a href="#">KE7</a> .  <b>All others:</b> GO to <a href="#">KE5</a> .	REPLACE IAC valve.

**KE5 CHECK AIR INLET FOR PLUGGING**

- Inspect the entire intake air system for debris, blockage and other damage.
- Remove and inspect IAC air tubes (if equipped) for blockage and other damage.
- Remove and inspect the air cleaner element for excessive dirt.

Is the intake air system OK?

Yes	No
RESTORE inlet air system. GO to <a href="#">KE6</a> .	REPAIR as necessary.

**KE6 CHECK FOR INLET AIR LEAKS**

- Key on, engine running.
- With engine running at idle, listen for vacuum leaks.
- Inspect the entire intake air system from the mass air flow (MAF) sensor to the intake manifold for leaks such as:
  - Cracked or punctured intake air tube.
  - Damaged or loose IAC air tubes.
  - Loose intake air tube at air cleaner housing or throttle body.
  - IAC valve or gasket seal.
  - EGR valve gasket seal.
  - Vacuum supply connector and hose.
  - PCV connectors and hose.

Are any leaks detected in the above areas?

Yes	No
REPAIR as necessary.	KEY OFF. GO to <a href="#">KE7</a> .

**KE7 CHECK IAC CIRCUIT FOR OPEN IN HARNESS**

**Note:** Refer to the PCM connector pin numbers in the beginning of this Pinpoint Test.

- IAC valve disconnected.
- Disconnect PCM.
- Measure resistance of IAC circuit between PCM harness connector pin and IAC valve harness connector.

Is resistance less than 5.0 ohms?

Yes	No

Yes	No
GO to <a href="#">KE8</a> .	REPAIR open circuit.

**KE8 CHECK IAC CIRCUIT FOR SHORT TO PWR IN HARNESS**

- Key on, engine off.
- Measure voltage on IAC circuit between PCM harness connector pin and battery negative post.

Is voltage less than 1.0 volt?

Yes	No
KEY OFF. GO to <a href="#">KE9</a> .	REPAIR short circuit.

**KE9 CHECK IAC CIRCUIT FOR SHORT TO GROUND IN HARNESS**

- Disconnect scan tool from DLC.
- Measure resistance between IAC and PWR GND circuits at the PCM harness connector.

Is each resistance greater than 10,000 ohms?

Yes	No
GO to <a href="#">KE10</a> .	REPAIR short circuit.

**KE10 CHECK IAC SIGNAL FROM PCM**

- Reconnect PCM and IAC valve.

**Note:** If stalling occurs place a shim under the hard stop screw to maintain idle conditions).

- Key on, engine running.
- Access IAC and RPM PIDS.
- With engine at normal operating temperature, accessories OFF and at closed throttle, the IAC duty cycle must be between approximately 22 percent and 45 percent.
- Slowly increase engine speed to 3000 rpm and return to closed throttle (Note: If closed throttle rpm is significantly higher than normal, ignore this step).

Is the IAC duty cycle within specification at closed throttle and does the duty cycle respond to the change in rpm?

Yes	No
<p><b>For Continuous Memory DTCs P1504 and P1507:</b></p> <p>GO to <a href="#">KE30</a> .</p> <p><b>All others:</b></p> <p>KEY OFF. INSPECT throttle body for damage. REPAIR as necessary. If OK, REPLACE IAC valve. RESET Keep Alive Random Access Memory (RAM). (REFER to <a href="#">Section 2</a> powertrain control module (PCM) Reset).</p>	<p>For DTC P1507, REPLACE IAC valve, otherwise REPLACE PCM (refer to <a href="#">Section 2</a> , Flash EEPROM).</p>

**KE20 DTC P1506: CHECK FOR VACUUM LEAKS**

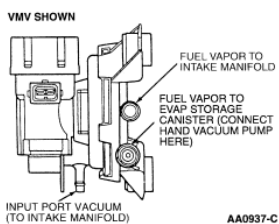
- Key on, engine running.
- With the engine at idle, listen for vacuum leaks.
- Inspect the entire intake air system from the mass air flow (MAF) sensor to the intake manifold for damage or leaks such as:
  - Cracked or punctured intake air tube.
  - Loose or cracked IAC air tubes.
  - Loose intake air tube at the air cleaner housing or throttle body.
  - IAC valve or gasket seal.
  - Intake manifold assembly or gasket seal.
  - EGR valve gasket seal.
  - Vacuum supply connectors and hose.
  - PCV valve, connectors and hose.

Are any leaks detected in the above areas?

Yes	No
KEY OFF. REPAIR as necessary.	KEY OFF. GO to <a href="#">KE21</a> .

**KE21 CHECK EVAP SYSTEM FOR A STUCK OPEN VALVE**

- Disconnect hoses at EVAP canister purge valve (or VMV).
- Connect a hand vacuum pump at the fuel vapor port to EVAP canister at the EVAP canister purge valve (or VMV).
- Apply 53 kPa (16 in-Hg) of vacuum to EVAP canister purge valve (or VMV).



Does the EVAP canister purge valve (or VMV) hold vacuum for 20 seconds?

Yes	No
RECONNECT hoses. GO to <a href="#">KE22</a> .	REPLACE EVAP canister purge valve.

**KE22 CHECK IAC VALVE FOR PROPER FUNCTION**

- Key on, engine running.
- Bring engine to normal operating temperature.
- Transmission in PARK or NEUTRAL.
- Disconnect IAC valve.

Does the rpm drop or engine stall?

Yes	No
KEY OFF. GO to <a href="#">KE23</a> .	KEY OFF. INSPECT throttle body for damage. REPAIR as necessary. If OK, REPLACE IAC valve. RESET Keep Alive Random Access Memory (RAM). (REFER to <a href="#">Section 2</a> powertrain control module (PCM) Reset.)

**KE23 CHECK IAC CIRCUIT FOR SHORT TO GND IN HARNESS**

**Note:** Refer to the PCM connector pin numbers in the beginning of this Pinpoint Test.

- Disconnect scan tool from DLC.
- Disconnect PCM.
- Measure resistance between IAC circuit at the PCM harness connector and battery negative post.

Is each resistance greater than 10,000 ohms?

Yes	No
<p><b>For fast idle symptom currently present:</b> REPLACE PCM (refer to <a href="#">Section 2</a>, Flash EEPROM).</p> <p><b>All others:</b> RESTORE vehicle. GO to <a href="#">KE30</a>.</p>	REPAIR short circuit.

**KE30 CHECK IAC SYSTEM FOR INTERMITTENT OPEN OR SHORT**

- Scan tool connected.
- Key on, engine running.
- Access IAC PID and RPM PIDs.
- With engine at normal operating temperature, accessories off and at idle, the IAC duty cycle must be between 20% and 45%.
- Observe the PIDs for an indication of a fault while completing the following at idle:
  - Lightly tap on IAC valve and wiggle harness connector to simulate road shock.
  - Grasp the vehicle harness closest to the IAC valve. Shake and bend a small section of the harness from the IAC to the dash panel and from the dash panel to the PCM.

Do the IAC or RPM PIDs suddenly change in value indicating a fault?

Yes	No
ISOLATE fault and REPAIR as necessary.	<p><b>For idle quality, starting or stalling symptoms currently present:</b> REPLACE IAC valve.</p> <p><b>All others:</b> Unable to duplicate or identify fault at this time. GO to Pinpoint Test Step <a href="#">Z1</a>.</p>