

**DTCS P0505, P0506 AND/OR ENGINE IDLE RPM FLUCTUATION—HARD START**

**TSB 12-7-4**

**FORD:**

2005-2008 Crown Victoria  
 2005-2009 Mustang  
 2004-2006 F-150  
 2004-2007 Explorer, F-Super Duty  
 2005-2006 E-Series  
 2006 F-53 Motorhome Chassis  
 2007 Explorer Sport Trac

**LINCOLN:**

2005-2008 Town Car  
 2006 Mark LT

**MERCURY:**

2005-2008 Grand Marquis  
 2004-2007 Mountaineer

This article supersedes TSBs **10-2-5, 10-2-3, 9-24-1, 09-4-5, 09-4-2** and **08-18-2** to consolidate previously released information and update the Service Procedure.

**ISSUE**

Some vehicles may exhibit diagnostic trouble codes (DTCs) P0505, P0506 and/or engine idle RPM fluctuation and hard starts. These vehicles may also exhibit DTCs P2111 and P2112 after KAM has been is cleared, or the battery has been disconnected or the vehicle had a dead battery. On vehicles with over 10,000 miles the issue may be caused by sludge buildup in the electronic throttle body (ETB) leading to airflow being less than desired.

**ACTION**

Follow the service procedure to correct the condition.

**SERVICE PROCEDURE**

1. Verify vehicle is listed in the vehicle application chart.

Vehicle Line Application			
Vehicle	Model Year Start	Model Year End	Engine
Crown Victoria	2005	2008	4.6L
E-150 and E-250	2005	2006	4.6L EFI
E-150 - E-450	2005	2006	5.4L EFI
E-350 and E-450	2005	2006	6.8L EFI
Explorer	2004	2007	4.0L
	2006	2007	4.6L 3V SOHC
Explorer Sport Trac	2007	2007	4.0L EFI SOHC
	2007	2007	4.6L 3V SOHC
F-150	2004	2006	4.6L EFI
	2006	2006	5.4L
F-250	2004	2004	5.4L EFI
	2005	2007	5.4L 3V SOHC
F-350	2005	2006	5.4L EFI
	2004	2005	5.4L LPG
	2005	2007	5.4L 3V SOHC
F-450 - F-550	2005	2006	6.8L EFI
F-53 Motorhome Chassis	2006	2006	6.8L 3V SOHC
Grand Marquis	2005	2008	4.6L
Mark LT	2006	2006	5.4L 3V SOHC
Mountaineer	2004	2005	4.0L SOHC FFV
	2004	2007	4.0L EFI SOHC
	2006	2007	4.6L 3V SHOC
Mustang	2005	2006	4.0L EFI SOHC
	2006	2006	4.6L 3V SOHC
	2007	2009	5.4L DOHC 4V EFI SC
Town Car	2005	2008	4.6L

2. Using IDS datalogger or equivalent, check the PID value of ETC\_TRIM.
  - a. If ETC\_TRIM PID is not available proceed to Step 3.
  - b. If ETC\_TRIM PID is available proceed to Step 4.

**NOTE:** The information in Technical Service Bulletins is intended for use by trained, professional technicians with the knowledge, tools, and equipment to do the job properly and safely. It informs these technicians of conditions that may occur on some vehicles, or provides information that could assist in proper vehicle service. The procedures should not be performed by "do-it-yourselfers". Do not assume that a condition described affects your car or truck. Contact a Ford or Lincoln dealership to determine whether the Bulletin applies to your vehicle. Warranty Policy and Extended Service Plan documentation determine Warranty and/or Extended Service Plan coverage unless stated otherwise in the TSB article. The information in this Technical Service Bulletin (TSB) was current at the time of printing. Ford Motor Company reserves the right to supersede this information with updates. The most recent information is available through Ford Motor Company's on-line technical resources.

## TSB 12-7-4 (Continued)

3. Reprogram the powertrain control module (PCM) to the latest calibration using IDS release 75.03A and higher. Calibration files may also be obtained at [www.motorcraft.com](http://www.motorcraft.com).
4. With the vehicle in park or neutral and A/C off, start the vehicle and allow the engine to reach normal operating temperature which is greater than 77 °C (170 °F) coolant temperature.
5. While the engine is running, using IDS datalogger or equivalent, check the PID value of ETC\_TRIM.
  - a. If ETC\_TRIM value is 3.0 degrees or greater, proceed to Step 6.
  - b. If ETC\_TRIM value is less than 3.0 degrees, but drivability concerns persist, Refer to Powertrain Control/Emissions Diagnosis (PC/ED) manual for normal diagnostics.
6. Remove the throttle body. Refer to Workshop Manual (WSM), Section 303-04.
7. Using Motorcraft® Choke and Linkage Cleaner or equivalent, spray the throttle body plate and bore. Using a small, soft, solvent resistant brush, clean the edges of the throttle plate and the mating surface of the throttle bore to remove all engine deposit build up. Reapply choke and linkage cleaner. (Figures 1-2)

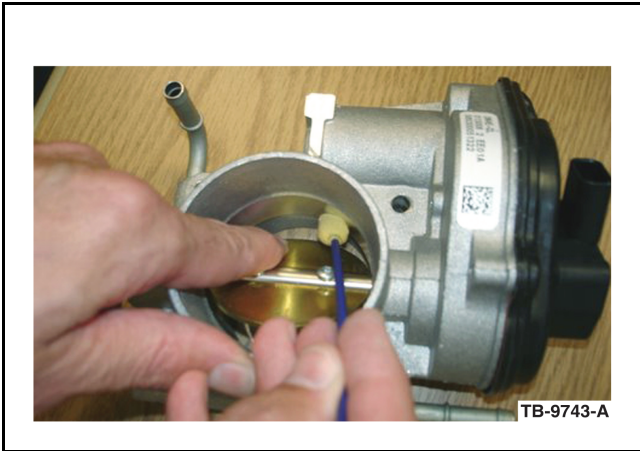


Figure 1 - Article 12-7-4

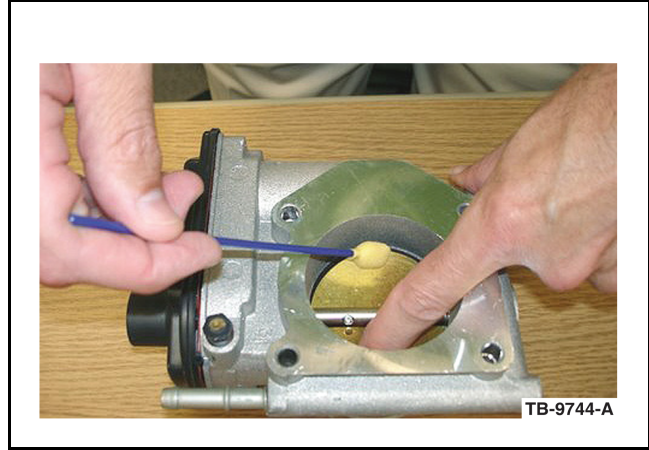


Figure 2 - Article 12-7-4

### NOTE

DO NOT SPRAY CLEANER DIRECTLY INTO THROTTLE PLATE PIVOT SHAFT.

8. Install the throttle body. Refer to WSM, Section 303-04.

PART NUMBER	PART NAME
PM-14	Motorcraft® Choke and Linkage Cleaner

**WARRANTY STATUS:** Eligible Under Provisions Of New Vehicle Limited Warranty Coverage  
 Warranty/ESP coverage limits/policies/prior approvals are not altered by a TSB.  
 Warranty/ESP coverage limits are determined by the identified causal part and verified using the OASIS part coverage tool.

OPERATION	DESCRIPTION	TIME
120704A	All Vehicles Included In This Article: Check DTCs, Reprogram The PCM, Warm The Engine, And Monitor ETC Trim Less Than 3.0 Degrees PASS	0.6 Hr.

## TSB 12-7-4 (Continued)

120704B	2006-2007 Explorer, Mountaineer 4.6L, 2004-2006 F-150 4.6L, 2007 Explorer Sport Trac 4.6L 3V: Check DTCs, Reprogram The PCM, Warm The Engine, Monitor ETC Trim Greater Than 3.0 Degrees FAILED, Clean The Throttle Body Includes Time To Remove And Install The Throttle Body (Do Not Use With Any Other Labor Operations)	1.0 Hr.	120704B	2005-2007 F-Super Duty 5.4L 3V: Check DTCs, Reprogram The PCM, Warm The Engine, Monitor ETC Trim Greater Than 3.0 Degrees FAILED, Clean The Throttle Body Includes Time To Remove And Install The Throttle Body (Do Not Use With Any Other Labor Operations)	1.3 Hrs.
120704B	2005-2008 Crown Victoria, Grand Marquis, Town Car, 2006 Mark LT 5.4L, 2004-2007 Explorer, Mountaineer 4.0L, 2007 Explorer Sport Trac 4.0L, 2005-2006 Econoline 4.6L, 2007-2009 Mustang 5.4L, 2006 Mustang 4.6L, 2005-2006 F-Super Duty 450/550 6.8L, 2004-2005 Explorer, Mountaineer 4.0L, 2004 F-Super Duty 250 5.4L: Check DTCs, Reprogram The PCM, Warm The Engine, Monitor ETC Trim Greater Than 3.0 Degrees FAILED, Clean The Throttle Body Includes Time To Remove And Install The Throttle Body (Do Not Use With Any Other Labor Operations)	1.1 Hrs.	120704B	2005-2006 Econoline 5.4L/6.8L: Check DTCs, Reprogram The PCM, Warm The Engine, Monitor ETC Trim Greater Than 3.0 Degrees FAILED, Clean The Throttle Body Includes Time To Remove And Install The Throttle Body (Do Not Use With Any Other Labor Operations)	1.4 Hrs.
			<b>DEALER CODING</b>		
			BASIC PART NO. 9F991	CONDITION CODE 41	
120704B	2005-2006 Mustang 4.0L, 2004-2006 F-150 5.4L 3V: Check DTCs, Reprogram The PCM, Warm The Engine, Monitor ETC Trim Greater Than 3.0 Degrees FAILED, Clean The Throttle Body Includes Time To Remove And Install The Throttle Body (Do Not Use With Any Other Labor Operations)	1.2 Hrs.			