

**ENGINE MISFIRE WITH DIAGNOSTIC TROUBLE  
CODE (DTC) P0301, P0302, P0303, P0304, P0305,  
P0306, P0307, P0308, AND P0316.**

**TSB 06-5-13**

**FORD:**  
2003-2004 Mustang, Mustang

2002-2003 Blackwood  
2003-2005 Aviator

**LINCOLN:**  
1999-2004 Navigator

**MERCURY:**  
2003-2004 Marauder

**ISSUE**

Some 1999-2004 Navigator, 2002-2003 Blackwood, 2003-2005 Aviator, 2003-2004 Marauder and 2003-2004 Mustang vehicles built before 12/19/2004 equipped with 4.6L 4V/5.4 4V engine may exhibit a runs rough, lacks power, and engine misfire, prompted by a MIL light and DTC codes P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, and P0316.

**NOTE**

THE ENGINE MISFIRE CONCERN IS TYPICALLY EXHIBITED ON THE LEFT HAND CYLINDER HEAD AND RARELY ON THE RIGHT HAND CYLINDER HEAD. UNLESS CONFIRMED, THE RIGHT HAND CYLINDER HEAD SHOULD NOT BE REPLACED AS AN "EXTRA MEASURE" SERVICE PRECAUTION.

**ACTION**

Diagnose engine for engine misfire concern. If diagnostics determine an engine misfire which is characterized by leakage through exhaust valve(s), only replace the affected cylinder head(s).

**NOTE**

THE REPLACEMENT CYLINDER HEAD WILL NOT IMPROVE OR REDUCE ENGINE HORSEPOWER OR TORQUE ABOVE ADVERTISED LEVELS.

**SERVICE PROCEDURE**

FOR VEHICLES WITH RUNS ROUGH/MISFIRE CONDITION:

PART NUMBER	PART NAME
YL7Z-6049-EA	Cyl Head Assy LH (5.4L)
2C5Z-6049-BAB	Cyl Head Assy LH (4.6L)
YL7Z-6049-FA	Cyl Head Assy RH (5.4L)
2C5Z-6049-CAB	Cyl Head Assy RH (4.6L)

1. Perform relative compression check on all cylinders. If abnormal, check cylinder leakage and actual compression for "low" cylinders refer to Workshop Manual (WSM), Section 303-00.
2. If leakage/compression check indicates a valve train concern, per valve train diagnostics in WSM, Section 303-00, replace cylinder head and cam assembly, pipe plugs and timing chain tensioner, per procedure outlined in WSM, Section 303-01.
3. If cylinder leakage and compression tests are inconclusive, perform misfire diagnostic, per TSB 05-22-8.

**OTHER APPLICABLE ARTICLES:** 05-22-08

**WARRANTY STATUS:** Eligible Under Provisions Of New Vehicle Limited Warranty Coverage

OPERATION	DESCRIPTION	TIME
MT060513	Claim Labor As Actual Time Or Use SLTS Operation If Available	Actual Time

**DEALER CODING**

BASIC PART NO.	CONDITION CODE
6049	42

**NOTE**

DO NOT TRANSFER SPARK PLUGS. INSTALL NEW SPARK PLUGS IN REPLACEMENT CYLINDER HEAD AND CAM ASSEMBLY.

**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, Lincoln, or Mercury 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 supercede this information with updates. The most recent information is available through Ford Motor Company's on-line technical resources.

## TSB 06-5-13 (Continued)

Model Year	Application	Part Number	Part Name
1999-2004	Navigator	YL7Z-6049-EA	LH Cylinder Head Assembly
1999-2004	Navigator	YL7Z-6049-FA	RH Cylinder Head Assembly
2002-2003	Blackwood	YL7Z-6049-EA	LH Cylinder Head Assembly
2002-2003	Blackwood	YL7Z-6049-FA	RH Cylinder Head Assembly
2003-2005	Aviator	2C5Z-6049-BAB	LH Cylinder Head Assembly
2003-2005	Aviator	2C5Z-6049-CAB	RH Cylinder Head Assembly
2003-2004	Marauder	2C5Z-6049-BAB	LH Cylinder Head Assembly
2003-2004	Marauder	2C5Z-6049-CAB	RH Cylinder Head Assembly
2003-2004	Mustang - Cobra, SVT, Mach I	2C5Z-6049-BAB	LH Cylinder Head Assembly
2003-2004	Mustang - Cobra, SVT, Mach I	2C5Z-6049-CAB	RH Cylinder Head Assembly

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Figure 1 - Article 06-5-13