



## Technical Service BULLETIN

March 1, 2002

Title:

### M.I.L. "ON," ENGINE MISFIRE P0300/01/02/03/04

Models:

'01 Prius

ENGINE  
EG006-02  
REVISED

#### TSB REVISION NOTICE:

- March 2, 2007: The OPN (now titled OFP) of the Warranty Information table has been updated. The ECM part number of the Parts Information table has been updated. Required SSTs section has been added. A note has been added to the Parts Information table and before step 1 of the Repair Procedure.

Previous versions of this TSB should be discarded.

#### TSB UPDATE NOTICE:

The information contained in this TSB supercedes TSB No. EG007-01.  
TSB No. EG007-01 is now obsolete and should be discarded.

**Introduction** Some 2001 model year Prius vehicles may exhibit a M.I.L. "ON" condition with Diagnostic Trouble Codes P0300, P0301, P0302, P0303, P0304 stored in the Engine ECU. Use the following procedure to diagnose and correct this condition.

**Applicable Vehicles**

- 2001 model year **Prius** vehicles.

#### Warranty Information

OP CODE	DESCRIPTION	TIME	OFP	T1	T2
EG1002	Fuel Injector Assembly R & R (All), R & R Engine ECM and Valve Clearance Inspection	3.2	23209-21020 89661-470##	04	99
Combo A	Valve Clearance Adjustment	4.7			
895011	Engine Control Module	0.4			

#### Engine Control Module (ECM) Applicable Warranty\*:

This repair is covered under the Toyota Federal Emission Components Warranty. This warranty is in effect for 96 months or 80,000 miles, whichever occurs first, from the vehicle's in-service date.

\* Warranty application is limited to correction of a problem based upon a customer's specific complaint.




**Parts  
Information**

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME
23209–21020	23209–21030	Fuel Injector Assembly
23291–41010	Same	Injector Vibration Insulators
13751–220##	Same	Valve Lifter
11213–21011	Same	Cylinder Head Cover Gasket
89661–47030 89661–47031 89661–47050	89661–47054	Engine Control Module (ECM)

**NOTE:**

Engine Control Modules with the following part numbers contain modified software logic and do NOT require replacement: 89661–47051, 89661–47052, and 89661–47053.

**Required  
SSTs**

ITEM NO.	SPECIAL SERVICE TOOLS (SSTs)	PART NUMBER	QTY	DRW**
1	<b>Toyota Diagnostic Tester Kit*</b> NOTE: <ul style="list-style-type: none"> <li>All components from this kit/set are required.</li> <li>12 Megabyte Diagnostic Tester Program Card (P/N 01002593–005) with version 10.1a Software (or later) is required.</li> </ul> 	TOY220036	1	9

\* Essential SSTs.

\*\* Drawer number in SST Storage System.

**NOTE:**

Additional Diagnostic Tester Kits, Program Cards, or other SSTs may be ordered by calling SPX/OTC at 1-800-933-8335.

**Required  
Tools &  
Material**

TOOLS & MATERIALS
Standard Metric Socket Set & Hand Tools

**Repair  
Procedure**

Use the following procedure to isolate the cause for the misfire condition.

**NOTE:**

Confirm the misfire condition is **NOT** caused by fuel.

**1****Check and record the DTC & Freeze Frame data.****CHECK:**

- Check and record the data from the Engine ECU with the IG Key "ON."

**Go**

Perform the following operations after cold soaking the engine.

**2****Valve clearance inspection.****CHECK:**

- Check the valve clearance and **record the actual measurement for each valve.** Pay particular attention to any suspect cylinder after reviewing the recorded DTC and Freeze Frame data.
- Follow the valve clearance procedure per the Prius Repair Manual instructions, Volume 2, page EM-5. Start the inspection with the smallest feeler gage. A gage that is too thick can compress the valve spring stem and produce incorrect results.

**NOTE:**

Do not use **GO-NO-GO** gages. Record the actual clearance for each valve. Valves measured **AT or BELOW** the minimum specification must be adjusted. See step 9.

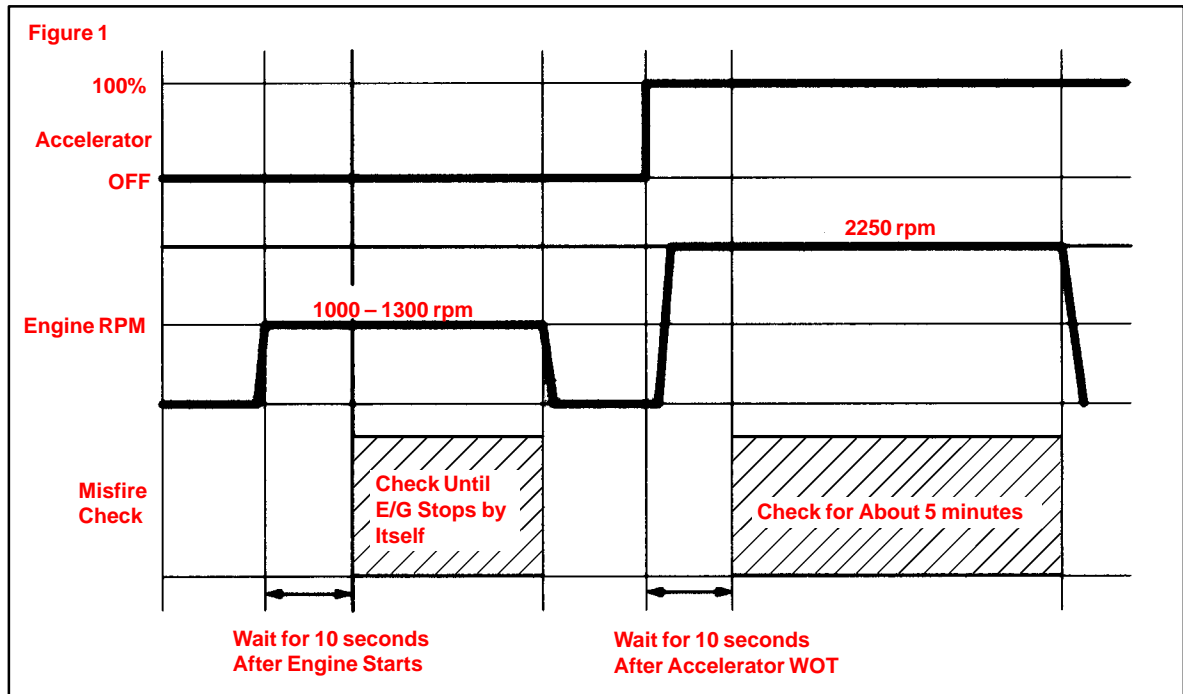
- Valve clearance specifications: (cold)  
Intake 0.17 – 0.23 mm (0.007 – 0.009 in.)  
Exhaust 0.27 – 0.33 mm (0.011 – 0.013 in.)

**Go****3****Check for a misfiring condition using the Toyota hand-held tester misfire counter.**

- A. Connect the Toyota hand-held Tester to DLC 3 connector.
- B. Insure the selector lever is in "P" range and the parking brake is "ON."
- C. Turn the IG key to "ON" and set the misfire counter in the Engine ECU. (Select ENG & ECT, Current Data, Data List, Misfire).
- D. Turn IG Key to "ST" and wait 10 seconds to stabilize the engine rpm.
- E. Observe the misfire counter until the engine stops after a complete warm-up. Check if any particular cylinder has a misfire indication. Note the misfire percent indication (see Figure 1).

**Repair  
Procedure**  
(Continued)

- F. After the engine stops, depress the accelerator to WOT and check the misfire counter for about 5 minutes (see Figure 1).



**CHECK:**

- Does misfire counter show any value frequently or continuously?

Yes

No

Go to step 8.

**4**

Verify misfiring cylinder.

**CHECK:**

- Is there any particular cylinder misfire indication?

Yes

No

Go to step 8.

**5**

Misfire isolation (1).

Swap the igniter, fuel injector and spark plug between the indicated and a non-indicating cylinder. Repeat the misfire check as in step 3. If misfiring condition was observed during warm-up, perform this inspection after a cold soak.

**CHECK:**

- Does misfire indication transfer after moving parts?

Yes

No

Go to step 8.

**Repair  
Procedure**  
(Continued)

**6 Misfire isolation (2).**

Swap the igniter and spark plug between the indicated cylinder and a non-indicating cylinder. Repeat the misfire check as in step 3. If misfiring condition was observed during warm-up, perform this inspection after a cold soak.

**CHECK:**

- Does misfire indication transfer after moving parts?

**Yes**

**No**

Go to step 9.

**7 Misfire isolation (3).**

Swap the igniter between the indicated cylinder and a non-indicating cylinder. Repeat the misfire check as in step 3. If misfiring condition was observed during warm-up, perform this inspection after a cold soak.

**CHECK:**

- Does misfire indication transfer after moving the part?

**No**

**Yes**

Replace the igniter.

Replace the spark plug.

**8 Inspect wire harness (W/H), connector, vacuum hose, Engine ECU voltage, injector, air flow meter and coolant temp. sensor.**

Perform the trouble shooting inspection of related components, as per steps 1, 3, 4, 5 and 7, on DI-67 in the Prius Repair Manual, Volume 1.

**CHECK:**

- Any abnormal conditions found?

**No**

**Yes**

Repair failed part.

**9 Replace the fuel injectors, Engine ECM and adjust valve clearances that are on or below the minimum specification.**

- Replace all fuel injectors and insulators with listed part numbers per the instructions in the Prius Repair Manual, Volume 2, SF-11 & SF-14.
- Replace the Engine Control Module per the instructions in the Prius Repair Manual, Volume 2, SF-62 & SF-63.
- Adjust any valve clearance that was measured out of specification or at the low end of the respective specification.
- Ensure that the final measured clearance is towards the high-end of specification.
- Follow the valve clearance adjustment procedure per the Prius Repair Manual instructions, Volume 2, EM-6.