



Technical Service BULLETIN

June 12, 2003

Title:

MASTER, HYBRID & M.I.L. "ON" P3190/P3191 & P3101

Models:

'01 – '03 Prius

ENGINE
EG011-03

TSB UPDATE NOTICE:

The information contained in this TSB supercedes EG012-02, dated September 5, 2002. The previous TSB should be discarded.

Introduction

Some 2001 through 2003 model year Prius vehicles may exhibit a Master, Hybrid, and M.I.L. warning light "ON" condition if an abnormally low engine power output or failure to start has been detected during a particular THS drive cycle. The following DTCs may be recorded:

1. After turning the ignition key to "START," the engine cranks and the "READY" light will turn "ON" and **P3191 & P3101 Information Code 205** may set in the engine ECM and HV ECU.
2. After READY "ON" has occurred and after transitioning from an electric drive mode to one where the engine power is required, a **P3190 & P3101 Information Code 204** may set in the engine ECM and HV ECU.

NOTE:

- The ECM part number has been revised since the last revision of EG012-02.
- Depending on the transition through or the particular THS drive cycle, the listed codes may be recorded alone or in combination.

Warranty Information

| OP CODE | DESCRIPTION | TIME | OFF | T1 | T2 |
|---------|---|------|-------------|----|----|
| EG2001 | R & R Fuel Tank Sub-Assembly | 2.1 | 77001-47071 | 01 | 99 |
| Combo X | Connection of Toyota Diagnostic Tester | 0.2 | — | | |
| EG2002 | R & R Engine Control Module | 0.4 | 89661-470## | | |
| Combo A | R & R Engine Control Module & Check Fuel Pressure & Circuit Opening Relay | 0.8 | 89661-470## | | |
| Combo X | Connection of Toyota Diagnostic Tester | 0.2 | — | | |
| 895101 | R & R Circuit Opening Relay Assembly | 0.1 | 90987-02012 | | |
| Combo X | Connection of Toyota Diagnostic Tester | 0.2 | — | | |

Applicable Warranty*:

The R & R of the Fuel Tank is covered under the Toyota Federal Emission Components Warranty. This warranty is in effect for 36 months or 36,000 miles, whichever occurs first, from the vehicle's in-service date. For California specification vehicles registered and operated in California, Massachusetts or Vermont, this repair (R&R Fuel Tank) is covered under the California emissions warranty, which is 84 months or 70,000 miles, whichever occurs first, from the vehicle's in-service date.

The R & R of the ECM 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.

The R & R of the Circuit Opening Relay is covered under the Toyota Comprehensive Warranty. This warranty is in effect for 36 months or 36,000 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.



Applicable Vehicles

- **2001 – 2003** model year **Prius** vehicles produced **BEFORE** the Production Change Effective VINs shown below.




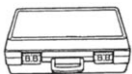

Production Change Information

| MODEL | COMPONENT | PRODUCTION CHANGE EFFECTIVE VIN |
|-------|-----------|---------------------------------|
| Prius | ECM | JT2BK12U#30087717 |
| | Fuel Tank | JT2BK18U#20056326 |

Parts Information

| PREVIOUS PART NUMBER | CURRENT PART NUMBER | PART NAME | QTY |
|--|---------------------|--------------------------|-----|
| 89661–47030 89661–47031 89661–47050 89661–47051 | 89661–47054 | Computer, Engine Control | 1 |
| 77001–47071 | Same | Fuel Tank Assembly | 1 |
| 90987–02012 | Same | Relay | 1 |

Required Tools & SSTs

| TOOLS & SSTs | PART NUMBER | QTY |
|--|----------------|-----|
| Standard Metric Socket Set and Hand Tools | — | — |
| Toyota Diagnostic Tester Kit*  | 01001271 | 1 |
| 12 Megabyte Diagnostic Tester Program Card with version 10.0a Software (or later)*  | 01002593-005 | 1 |
| Toyota Diagnostic Tester VP414 Printer Kit  | 01002488 | 1 |
| EFI Fuel Pressure Kit*  | 09268–45015–01 | 1 |
| Injection Measuring Tool Set*  | 09268–41047 | 1 |

* Essential SSTs.

NOTE:

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

Diagnostic Procedure

Since many factors can prevent the engine from starting, eliminate other possible causes prior to performing the detailed diagnostic procedure that follows the general trouble areas.

General trouble areas:

1. Fuel injection system
2. Ignition system
3. Engine compression
4. Air induction system
5. Fuel quality and level (refer to the Owner's Manual for recommendations)
6. Correct engine oil viscosity and level (refer to the Owner's Manual for recommendations). If overfilled, check intake manifold for contamination.

Diagnostic Procedure (Continued)

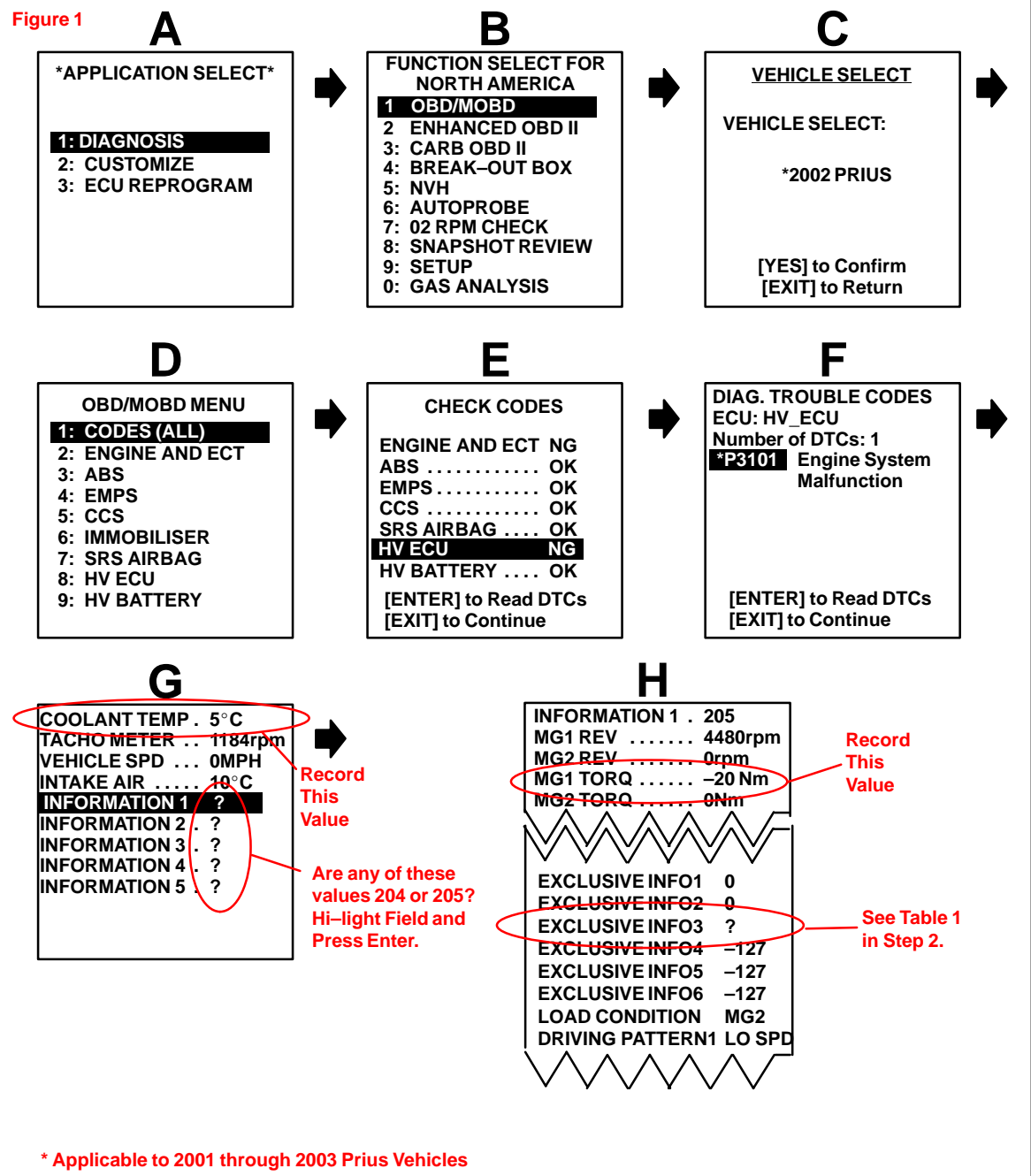
If no trouble is found in the general trouble areas, use the following diagnostic procedure on pages 3 through page 5 to isolate other potential causes.

- Connect the Toyota Diagnostic Tester to DLC3 and record each respective DTC. Ensure that software version 10.0a or later is used.
- Record the Freeze Frame Data for each Trouble Code. Use the following procedure to isolate the cause for the particular code(s):

1

Connect the Toyota Diagnostic Tester & print the DTC P3101, Information code 204 or 205 freeze frame data (or store as a Techview file using TIS [Technical Information System]).

Figure 1



Diagnostic
Procedure
(Continued)**2** Check HV-ECU Freeze Frame P3101 INFO 204 or 205
"Exclusive INFO3" Data.**TABLE 1 RESULT**

| DISPLAYED | ACTION |
|-----------|--|
| 1 | System detected an "Out of gas" condition. Explain to the customer and monitor. |
| 0 | Go to next step. |

NOTE:

Disregard data displayed in other Exclusive Info fields.

| | |
|------------------|--------|
| EXCLUSIVE INFO1 | 0 |
| EXCLUSIVE INFO2 | 0 |
| EXCLUSIVE INFO3 | ? |
| EXCLUSIVE INFO4 | -127 |
| EXCLUSIVE INFO5 | -127 |
| EXCLUSIVE INFO6 | -127 |
| LOAD CONDITION | MG2 |
| DRIVING PATTERN1 | LO SPD |
| DRIVING PATTERN2 | LO SPD |
| DRIVING PATTERN3 | LO SPD |
| IG OFF IN DRVIN | NO |
| SG B IN REDUCIN | NO |
| SG B IN REDUC/P | NO |
| STEP ACC&BRAK | NO |
| IG OFF TIME | 0min |
| OCCURRENCE ORDR | 1 |

See Table 1.

3 Check for codes stored by the Engine ECM or other ECUs other than P3190/91. (See Figure 1, frame "E")

No

Yes

Using TIS / Repair Manual, follow the applicable Diagnostic Chart for each stored DTC. Return to step 4 after correcting other DTCs.

4 Check the Circuit Opening Relay operation. For additional information, refer to TIS / Repair Manual: SFI, Circuit Opening Relay Inspection.

OK

NG

Replace Circuit Opening Relay and continue with step 5.

5 Check fuel pressure. For additional information, refer to TIS / Repair Manual: SFI, Fuel Pump Inspection.

Connect a fuel pressure gauge to determine if any of the following conditions are observed.

- Fuel pressure is lower than 294 KPa at idle (1000 rpm).
- Fuel pressure decreases to a level close to 0 KPa, 5 minutes after the engine is shut off.
- Abnormal fuel pressure needle fluctuation while idling or driving.

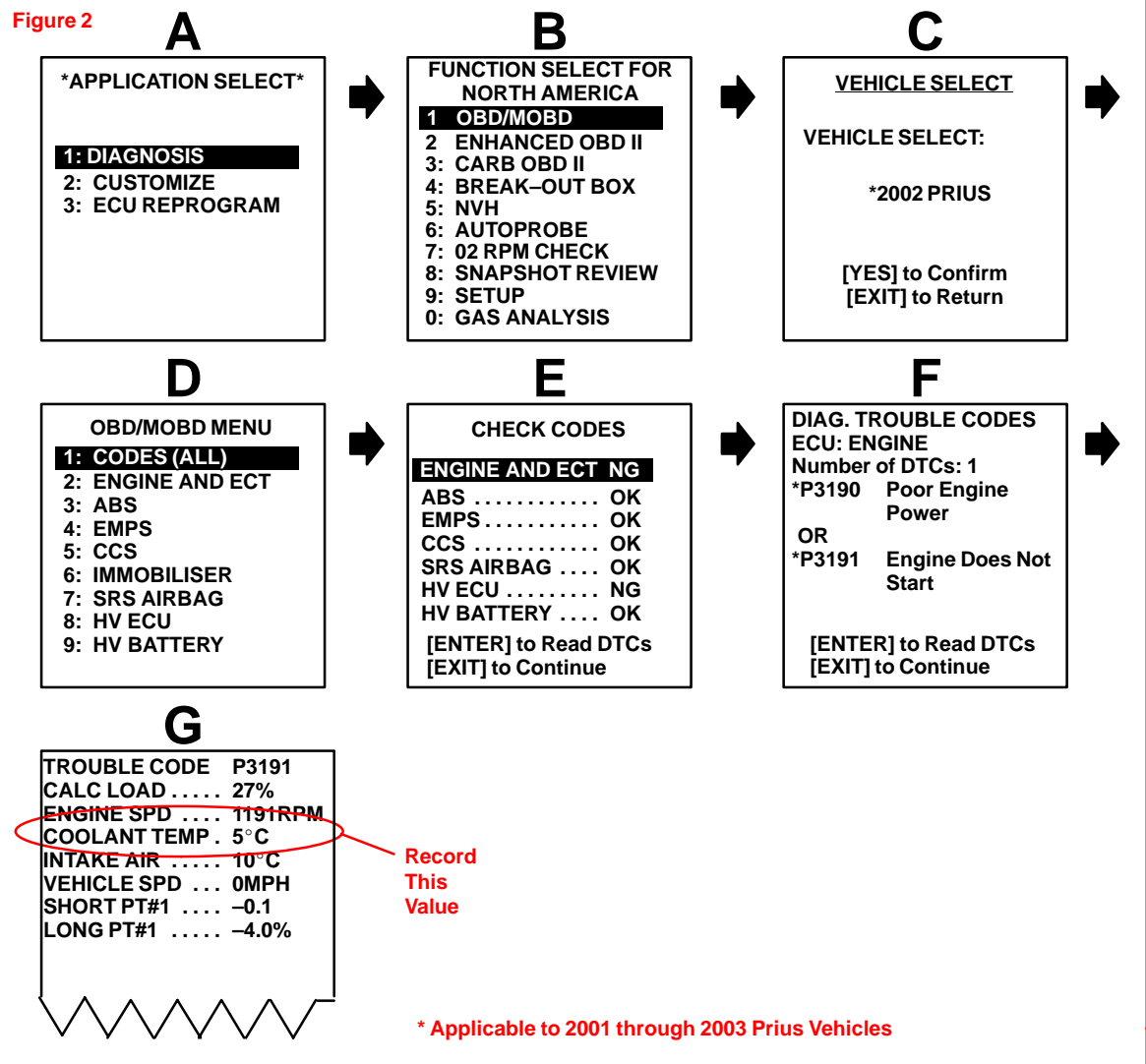
OK

NG

Replace the Fuel Tank Assembly. Refer to TIS / Repair Manual: SFI, Fuel Tank and Line.

Diagnostic
Procedure
(Continued)**6**

Connect the Toyota Diagnostic Tester & print the DTC P3190/91, freeze frame data (or store as a Techview file using TIS [Technical Information System]).

Figure 2**CONDITION:**

Refer to the recorded values in Figure 1 and Figure 2. Is the Engine Coolant Temperature between 14°F and 50°F (–10°C and 10°C) **AND** is the MG1 Torque value 0 or a negative value?

YES**NO**

The engine did not start. Return to the "General Trouble Areas" on page 2 and inspect each system for proper operation / specifications.

Replace the Engine ECM. For additional information, refer to TIS / Repair Manual: SFI, Engine Control Module (ECM).

NOTE:

Replace the engine ECM only when the Part Number is older than 89661–47054. The ECM part number has been revised since the last TSB revision of EG012–02.