



## Long Crank Time or Hard Starting

### SYMPTOM

There is excessive cranking or the engine is hard to start.

### PROBABLE CAUSE

There are two possible causes:

1. Contamination in the fuel pressure regulator causes the regulator to stick or intermittently stick, which causes a delay in fuel pressure at start-up.
2. Exhaust gas backflow into the intake manifold at engine shutdown may cause a poor mixture of intake air and fuel at the next engine start-up.

### CORRECTIVE ACTION

Replace the fuel pressure regulator, if needed, and use the HDS to update the PGM-FI software in the ECM/PCM.

NOTE: Vehicles with VIN 19UUA6...4A041208 thru 19UUA6...4A058862 already have an improved fuel pressure regulator. For these vehicles, skip **DIAGNOSIS**, and go to step 10 of **REPAIR PROCEDURE** to update the PGM-FI software in the ECM/PCM.

### PARTS INFORMATION

Fuel Pressure Regulator Kit: P/N 17052-SEP-A00  
(The kit includes the regulator, the gasket, and the locknut.)

### TOOL INFORMATION

Fuel Sender Wrench: P/N 07AAA-S0XA100

### SOFTWARE INFORMATION

HDS Software Version: 2.004.004 or later

PGM-FI Software Versions or Later:

YEAR	PROGRAM ID	PROGRAM PART NUMBER
2004	DAA070	37805-RDA-A07
	DAA570	37805-RDA-A57

### WARRANTY CLAIM INFORMATION

**In warranty:** The normal warranty applies.

OP#	Description	FRT	Template ID
121135	Do diagnosis, replace the fuel pressure regulator, and update the ECM/PCM.	0.4	06-013A
125517	Update the ECM/PCM.	0.3	
125517	Update the ECM/PCM.	0.3	06-013B

Failed Part: P/N 16015-S3V-A50

Defect Code: 08103

Symptom Code: 09001

Skill Level: Repair Technician

**Out of warranty:** Any repair performed after warranty expiration may be eligible for goodwill consideration by the District Parts and Service Manager or your Zone Office. You must request consideration, and get a decision, before starting work.

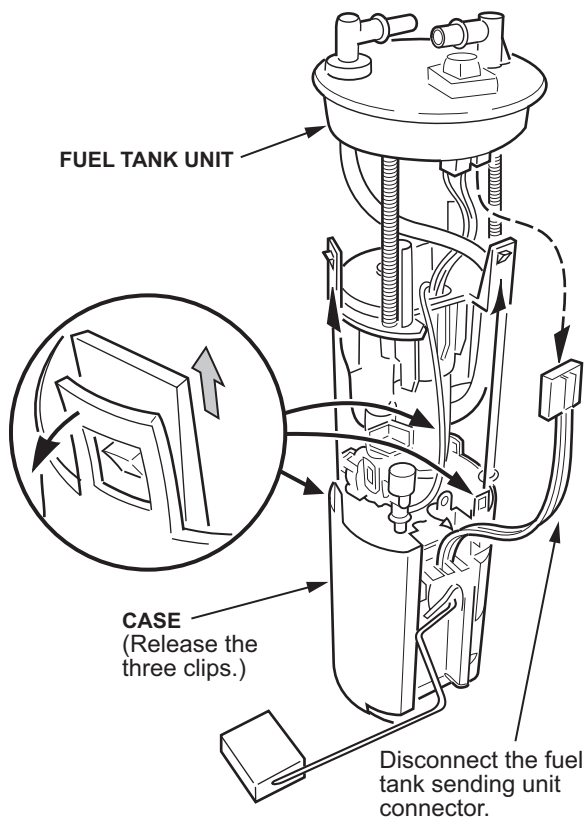
### DIAGNOSIS

1. Install the fuel pressure gauge:
  - Refer to steps 1 and 2 on page 11-437 of the 2004–06 TL Service Manual, or
  - Online, enter keyword **FUEL PRESSURE**, and select **Fuel Pressure Test** from the list.
2. Start the engine and let it idle for 2 minutes.
3. Turn off the engine. Check the fuel pressure gauge. (Pressure should be 380 to 430 kpa [55 to 63 psi].)
4. Monitor the fuel pressure reading. If the fuel pressure bleeds down quickly after the engine is turned off, go to **REPAIR PROCEDURE**. If the fuel pressure does not drop quickly, follow normal troubleshooting procedures for hard starting problems.

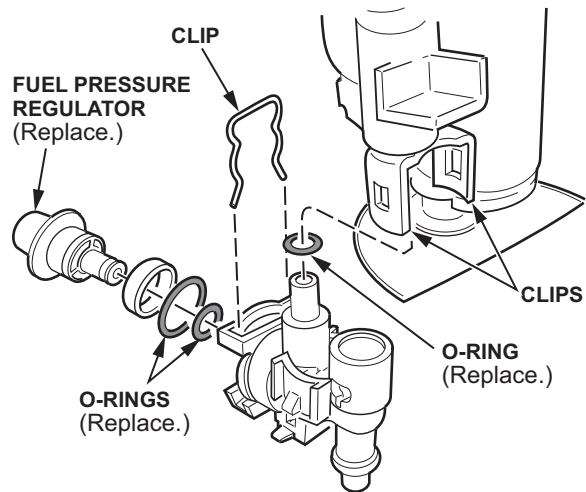
NOTE: There is no specification for fuel pressure bleed rate. Many variables can affect fuel line pressure, such as the fuel pump and fuel injectors. A bad regulator will lose most of the fuel pressure in the first few minutes after shutting off the engine.

## REPAIR PROCEDURE

1. Relieve the fuel pressure.
  - Refer to page 11-435 of the 2004–06 TL Service Manual, or
  - Online, enter keyword **PRES RELIEVING**, and select **Fuel Pressure Relieving** from the list.
2. Remove the fuel tank unit.
  - Refer to page 11-447 of the service manual, or
  - Online, enter keyword **FUEL PUMP REP**, and select **Fuel Pump/Fuel Gauge Sending Unit Replacement** from the list.
3. Remove the fuel tank unit from the case.
  - Disconnect the fuel tank sending unit connector.
  - Release the three clips, and then pull out the fuel tank unit from the case.



4. Release the clips, then remove the fuel pressure regulator mount from the fuel tank unit.



5. Remove the clip, then remove the fuel pressure regulator. Install the new regulator with new O-rings. Reassemble the fuel tank unit.
6. Place the new gasket onto the tank body.
7. Align the marks on the fuel tank unit and the fuel tank. (See page 11-447, step 8 of the service manual.) Install the fuel tank unit into the tank without dislodging the gasket. Using hand pressure only, slide the fuel tank unit into the tank until it is seated properly.
8. Using the fuel sender wrench, torque the fuel tank locknut to **93 N·m (69 lb-ft)**.  
**NOTE:** Do not use the locknut to force the pump into the tank.
9. Reinstall all removed parts.
10. Use the HDS to update the PGM-FI software in the ECM/PCM, using HDS version 2.004.004 or later. To update the PGM-FI software, refer to service bulletin 01-026, *Updating the ECM/PCM*.
11. Do the idle learn procedure:
  - Make sure all electrical items (A/C, audio unit, defogger, lights, etc.) are off.
  - Start the engine, and let it warm up to its normal operating temperature (the cooling fans cycle twice).
  - Let the engine idle (throttle closed and all electrical items off) for **10 minutes**.

12. Do the **low-rpm** CKP pattern learn procedure:
  - Test-drive the vehicle on a level road. With the A/T in the Sequential Sportshift mode and in second or third gear, or the M/T in second or third gear, decelerate (with the throttle fully closed) from an engine speed of **2,500 rpm** down to **1,000 rpm**.
  - Stop the vehicle, and put the transmission into Park or neutral. Set the parking brake. Do not turn the ignition off.
13. Connect the HDS to the DLC, and check the status of **PULSER F/B LEARN**:
  - On the **Selection Menu**, select **PGM-FI**.
  - On the **Mode Menu**, select **Data List**.
  - Check the value of **PULSER F/B LEARN**.
  - If the value is **Completed**, go to step 14.
  - If the value is **Not Completed**, be sure the engine is at normal operating temperature (the **ECT SENSOR (1)** value is 176 or higher), and repeat step 12.

14. Do the **high-rpm** CKP pattern learn:

NOTE: The low-rpm CKP pattern learn must be completed before you do the high-rpm CKP pattern learn.

  - Test-drive the vehicle on a level road. With the the A/T in low gear, or the M/T in first gear, decelerate (with the throttle fully closed) from an engine speed of **5,000 rpm** down to **3,000 rpm**.
  - Stop the vehicle, and put the transmission into Park or neutral. Set the parking brake. Do not turn the ignition off.
15. Connect the HDS to the DLC (if not already connected), and check the status of **PULSER F/B LEARN (HIGH RPM)**:
  - On the **Selection Menu**, select **PGM-FI**.
  - On the **Mode Menu**, select **Data List**.
  - Check the value of **PULSER F/B LEARN (HIGH RPM)**.
  - If the value is **Completed**, you've completed the CKP pattern learn procedure.
  - If the value is **Not Completed**, be sure the engine is at normal operating temperature (the **ECT SENSOR (1)** value is 176 or higher), and repeat step 14.
16. Start the vehicle a couple times to make sure the symptom is repaired. If it is not, continue with normal troubleshooting procedures for hard starting problems.