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GROUP: Vehicle Performance

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THIS BULLETIN SUPERSEDES SERVICE BULLETIN 18-011-11 REV. B., DATED JULY 1, 2011, WHICH SHOULD BE REMOVED FROM YOUR FILES. ALL REVISIONS ARE HIGHLIGHTED WITH **ASTERISKS**** AND INCLUDE ADDITIONAL OVERVIEW AND DIAGNOSTIC INFORMATION.**

HELP USING THE wiTECH DIAGNOSTIC APPLICATION FOR FLASHING AN ECU IS AVAILABLE BY SELECTING "HELP" THEN "HELP CONTENTS" AT THE TOP OF THE wiTECH DIAGNOSTIC APPLICATION WINDOW.

THE wiTECH SOFTWARE LEVEL MUST BE AT RELEASE 12.02 OR HIGHER TO PERFORM THIS PROCEDURE.

THE DRBIII® FLASH FILES FOR THIS BULLETIN ARE AVAILABLE ON DealerCONNECT.

SUBJECT:

Flash: Diagnostic Enhancements For Fuel System

OVERVIEW:

This bulletin provides Engine Control Module (ECM) software enhancements to improve robustness to fuel system issue detection and two new Diagnostic Trouble Codes (DTC's). This bulletin involves selectively erasing and reprogramming the Engine Control Module (ECM) with new software.

Diagnostic procedures for these new DTC's are included in this Service Bulletin on the last 2 pages which may be printed.

The two new injector Diagnostic Trouble Codes (DTC's) for excessive injector return flow are:

- P1222 - LEAK DETECTION DURING MOTORING
- P1223 - LEAK DETECTION BASED ON QUANTITY BALANCE

****When the fault(s) occur, a solid **Wait to Start** lamp will illuminate in the cluster along with chiming 10 times. When the fault goes inactive, it will clear the wait to start lamp with no chimes**.**

MODELS:

2004.5	DR	Ram Truck (2500/3500 Pick Up)
2005 - 2007	DH	Ram Truck (2500 Pick Up)
2006 - 2007	D1	Ram Truck (3500 Pick Up)

NOTE: This bulletin applies to vehicles equipped with a 5.9L Cummins Diesel Engine (sale codes ETC or ETH).

PARTS REQUIRED:

Qty.	Part No.	Description
1	04275086AD	Label, Authorized Modification

REPAIR PROCEDURE 2004.5 - 2005 MY - FLASH USING DRBIII®; - USING THE INTERNET TO RETRIEVE THE FLASH FILE:

NOTE: Whenever a controller is programmed, the software in the DRBIII® must be programmed with the latest revision level available. Current software version is 64.1.

NOTE: If this flash process is interrupted/aborted, the flash should be restarted.

NOTE: Remove any unnecessary PCMCIA cards prior to starting a DRB III® flash.

1. Before beginning the reprogramming procedure, remove any old flash reprogramming files from the DRBIII® memory. To clear the memory from the MAIN MENU power up the DRBIII® and then:
 - a. Simultaneously press the MORE and YES keys.
 - b. A screen will appear requesting a COLD BOOT.
 - c. Follow the on screen instructions by selecting the F4 key.
 - d. When the DRBIII® reboots to the MAIN MENU, proceed to [Step #3](#).
2. With the ignition switch in the RUN position, determine and record the ECM part number of the ECM currently in the vehicle. Using the DRBIII® select:
 - a. DRBIII® Standalone
 - b. 1998 - 2007 Diagnostics
 - c. All (Except Below)
 - d. Engine
 - e. Module Display
 - f. Record the ECM part number on the repair order for later reference.

NOTE: If the ECM is not operational, the ECM part number can be obtained from the label on the controller. For 2003 and later vehicles, if the label on the controller is not legible, record the Reference Number for use later. The Reference Number is located in the Reference Number box at the top, center of the Engine Data Plate. The Engine Data Plate is located on the intake side of the breather cover or affixed to the APPS bracket.

3. Page back to the Main Menu
4. Determine if the vehicle is equipped with SKIM. Using the DRBIII® select:
 - a. DRBIII® Standalone
 - b. 1998 - 2007 Diagnostics
 - c. All
 - d. System Monitor
 - e. J1850 Module Scan
 - f. Look for "SKIM" in the list of modules
5. If the vehicle is not equipped with SKIM then proceed to [Step #6](#). If the vehicle is equipped with SKIM obtain the vehicle Personal Identification Number (PIN) before continuing with [Step #6](#). This information is available from:
 - a. The original selling invoice.
 - b. The DealerCONNECT system under the Parts tabs - select Key Codes.
 - c. By contacting the District Manager.

CAUTION: Failure to install the SKIM pin number into the module after flashing the Cummins ECM will cause a start and stall condition.

6. Install a battery charger and verify that the charging rate provides approximately 13.2 - 13.8 volts. Set the battery charger to continuous charge. Do not allow the charger to time out during the flash process. Remove the charger from the battery when the flash process is complete.

NOTE: When reprogramming a Cummins ECM be sure to do the following;

- **Download the flash file from TechCONNECT to the DRBIII® with the DRBIII® disconnected from the vehicle.**
 - **Download the flash file from the DRBIII® to the vehicle with the DRBIII® disconnected from TechCONNECT.**
7. Connect the DRBIII® to TechCONNECT. Open TechTOOLS and verify that the "DRBIII® Status: Connected" message is in the upper right corner of the TechTOOLS screen.
 8. Enter the old Cummins ECM part number obtained from the DRBIII® in [Step #2](#) into the Parts Criteria window.
 9. Select SHOW UPDATES.
 10. Highlight the proper flash file from the list:
 - a. If the old ECM part number is known, highlight the flash file listed, based on the old ECM part number recorded earlier in [Step #2](#).
 - b. If the old part number is not known, highlight the proper flash file based on the Reference No. located in the "Ref. No." box, at the top, center of the Engine Data Plate.
 11. Select the DRBIII® radio button which is next to the DOWNLOAD/UPDATE button.
 12. Select the DOWNLOAD/UPDATE button.
 13. Monitor the Flash Download/Update Progress window on the TechCONNECT and follow the instructions on TechCONNECT. When the flash process is complete, proceed to the next step.
 14. Disconnect the DRBIII® from TechCONNECT.
 15. Connect the DRBIII® to the vehicle.
 16. Download the flash file from the DRBIII® to the vehicle. Using the DRBIII® select:
 - a. Vehicle Flash
 - b. Follow the directions on the DRBIII® screen. When the flash process is complete, proceed to the next step.

17. If the vehicle is equipped with SKIM, proceed to [Step #18](#). If the vehicle is not equipped with SKIM, proceed to [Step #19](#).
18. On vehicles equipped with SKIM, transfer the VIN and Security Key information from the SKIM to the ECM. Using the DRBIII® select:
 - a. DRBIII® Standalone
 - b. 1998 - 2007 Diagnostics
 - c. All
 - d. Theft Alarm
 - e. SKIM
 - f. Miscellaneous
 - g. Cummins ECM Replaced
 - h. Follow the directions on the DRBIII® screen. When the process is complete, proceed to [Step #20](#).
19. On vehicles not equipped with SKIM, manually enter the VIN in the ECM. Using the DRBIII® select:
 - a. DRBIII® Standalone
 - b. 1998 - 2007 Diagnostics
 - c. All
 - d. Engine
 - e. Cummins Controller (ECM/ENGINE)
 - f. Miscellaneous
 - g. CM84X Check VIN
 - h. Follow the directions on the DRBIII® screen. When the process is complete, proceed to next step.

NOTE: Due to the Cummins controller programming procedure, a DTC may be set in other modules (PCM, TCM, BCM, MIC, SKIM, etc.) within the vehicle, if so equipped. Some DTC's may cause the MIL to illuminate. Check all modules using "Module Scan", record the DTC's, and erase these DTC's prior to returning the vehicle to the customer. Erase any DTC's in the PCM only after all other modules have had their DTC's erased.

NOTE: The following step is required by law.

20. Type the necessary information on the Authorized Modification Label p/n 04275086AB and attach near the VECI label

REPAIR PROCEDURE 2006 - 2007 MY - USING WiTECH DIAGNOSTIC APPLICATION:

NOTE: HELP USING THE WiTECH DIAGNOSTIC APPLICATION FOR FLASHING AN ECU IS AVAILABLE BY SELECTING “HELP” THEN “HELP CONTENTS” AT THE TOP OF THE WiTECH DIAGNOSTIC APPLICATION WINDOW.

NOTE: If this flash process is interrupted/aborted, the flash should be restarted.

1. Reprogram the PCM with the latest software. Follow the detailed service procedures available in DealerCONNECT/TechCONNECT, Refer To Group 8 - Electrical > 8E - Electronic Control Modules - Service Information > Module - Engine Control, Diesel > Standard Procedure > PCM/ECM Reprogramming - Diesel.
2. Type the necessary information on the “Authorized Modification Label” and attach it near the VECI label.

Diagnostic procedures for these new DTC's are included in this Service Bulletin on the last 2 pages which may be printed.

POLICY:

Reimbursable within the provisions of the warranty.

TIME ALLOWANCE:

Labor Operation No:	Description	Amount
18-19-04-9G	Module, Engine Control (ECM) - Reprogram 2004.5 - 2005 (B)	0.8 Hrs.
18-19-04-9H	Module, Engine Control (ECM) - Reprogram 2006 - 2007 (B)	0.4 Hrs.

DIAGNOSTIC PROCEDURE P1222 - LEAK DETECTION DURING MOTORING

NOTE: For a complete wiring diagram, refer to the Wiring Information.

When engine is motoring (i.e. Engine is running, but requires no fuel injection) the only required fuel delivery to the rail is due to natural leakage in the system. The natural leakage depends directly on the rail pressure. A definite amount of fuel is required to overcome the natural leakage, for different fuel pressures. The Engine Control Module (ECM) sets Leakage Detected, when the fuel flow exceeds an expected value. When a leak is detected in the system, a counter is initiated. When the counter reaches a predetermined value a fault is set and engine derate is enabled. When the leak is not detected the counter counts down, and once the counter becomes zero the engine is set back to normal running conditions.

A solid **Wait to Start lamp will illuminate in the cluster along with chiming 10 times. When the fault goes inactive, it will clear the wait to start lamp with no chimes**.

- **When Monitored:** Engine is motoring and at operating temperature with no fuel system and engine speed related DTC's.
- **Set Condition:** Counter reaches a calibrated value.

Possible Causes
EXCESSIVE INJECTOR RETURN

NOTE: Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding.

OTHER DTC's PRESENT

1. Turn the ignition on.
2. With the scan tool, select View DTC's. Are there any other fuel system related DTC's present along with this DTC?
 - a. Yes >>> Perform the diagnostics for the other fuel system DTC's before proceeding.
 - b. No >>>> Perform the INJECTOR RETURN FLOW TEST procedure.

DIAGNOSTIC PROCEDURE P1223 - LEAK DETECTION BASED ON QUANTITY BALANCE

NOTE: For a complete wiring diagram, refer to the Wiring Information.

There is a required amount of fuel required by the fuel system to keep the system stable. The amount of fuel required depends on fuel pressure, injection quantity, engine speed, and coolant temperature. The Engine Control Module (ECM) sets Leakage Detected, when the fuel flow exceeds an expected value. When a leak is detected in the system, a counter is initiated. When the counter reaches a predetermined value a fault is set and engine derate is enabled. When the leak is not detected the counter counts down, and once the counter becomes zero the engine is set back to normal running conditions.

****A solid Wait to Start lamp will illuminate in the cluster along with chiming 10 times. When the fault goes inactive, it will clear the wait to start lamp with no chimes**.**

- **When Monitored:** Engine is running above low idle speed and at operating temperature with no fuel system and engine speed related DTC's.
- **Set Condition:** Counter reaches a calibrated value.

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding.

Possible Causes
EXCESSIVE INJECTOR RETURN

NOTE: Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding.

OTHER DTC's PRESENT

1. Turn the ignition on.
2. With the scan tool, select View DTC's. Are there any other fuel system related DTC's present along with this DTC?
 - a. Yes >>> Perform the diagnostics for the other fuel system DTC's before proceeding.
 - b. No >>>> Perform the INJECTOR RETURN FLOW TEST procedure.