

NO: 18-31-96

SUBJECT: Idle Shake, Sag, Hesitation, Diagnostic Trouble Code (DTC) \$77 - Fuel System Lean

DATE: Nov. 8, 1996

NOTE: THIS BULLETIN APPLIES TO VEHICLES EQUIPPED WITH 2.5L ENGINES.

SYMPTOM/CONDITION:

MIL light may illuminate setting Diagnostic Trouble Code (DTC) \$77 (fuel system lean) when diagnostics are performed. The vehicle may exhibit a cold engine idle shake, sag or hesitation with or without the trouble code.

DIAGNOSIS:

Using the Mopar Diagnostic System (MDS) or the Diagnostic Scan Tool (DRB III) with the appropriate Diagnostic Procedures Manual, verify all engine/transmission/speed control systems are functioning as designed. If Diagnostic Trouble Codes (DTC's) are present, record them on the repair order and repair as necessary before proceeding further with this bulletin. If no DTC's or those listed above are present and any of the above symptoms have been experienced, perform the Repair Procedure.

PARTS/EQUIPMENT REQUIRED:

Quantity	Part No.	Description
1	CH6000	Scan Tool (DRB III)
1	CH7035	General Purpose Interface Bus Cable (GPIB)
1	CH7000	J1962 Cable
1	04669020	Label - Authorized Software Update
1	04275086	Label - Authorized Modification
1	04883378	Fuel Rail Kit

NOTE: THE MDS AND DRBIII ARE REQUIRED TO PERFORM THIS REPAIR AND THE SYSTEM MUST BE OPERATING WITH RELEASE 20 OR HIGHER AND TIL CD RELEASE 1119 OR HIGHER MUST BE INSTALLED.

REPAIR PROCEDURE:

This repair involves selectively erasing and reprogramming the Powertrain Control Module (PCM) **on TJ vehicles** with new software (calibration changes) and installing a revised fuel rail on all listed vehicles.

NOTE: THE PCM REPROGRAMMING PROCEDURE APPLIES TO TJ VEHICLES. PROCEED TO STEP 11 FOR XJ & AN VEHICLES.

1. Connect the MDS (Mopar Diagnostic System) and DRB III (Scan Tool) to the vehicle and power them up.
2. Use the arrow keys and select #2 MDS DIAGNOSTICS on the DRB III MAIN MENU Screen.
3. Use the arrow keys and select DIAGNOSTIC MENU on the MDS, then press NEXT MENU.
4. Use the arrow keys and select VEHICLE CONTROLLER PROGRAMMING on the MDS, then press NEXT MENU.
5. Use the arrow keys and select PROGRAMMING OF ALL OTHER CONTROLLERS USING MDS & DRBIII on the MDS, then press NEXT MENU.
6. Follow the steps presented on the MDS and DRB III which will allow the DRB III to obtain the current part number of the PCM.
7. The MDS will display the part number of the PCM on the vehicle and the appropriate replacement part number, then press NEXT MENU to begin programming.

If the PCM on the vehicle has already been updated or programmed, a NO UPDATES AVAILABLE message will be displayed. Check the part number of the PCM on the vehicle and compare it to the part number displayed. If the

PCM has already been updated, then another condition exists that will require further diagnosis and repair.

8. The MDS and DRB III will prompt for any operator action needed during the remainder of the programming process.

NOTE: THE FOLLOWING STEPS ARE REQUIRED BY LAW.

9. Type the necessary information on the "Authorized Software Update Label" P/N 4669020. Attach the label to the PCM and cover the label with the clear plastic overlay. ([See Illustration](#))
10. Type the necessary information on the Authorized Modification Label and attach the label near the VECI Label. ([See Illustration](#))
11. Remove the fuel tank filler cap.
12. Disconnect the battery negative cable.
13. Perform the fuel pressure release procedure to relieve any fuel system pressure that may be present on the inject rail. If you are not familiar with this procedure, refer to group 14 in the appropriate service manual.
14. Remove the air cleaner crossover tube.
15. Remove and tag each injector harness connector to identify them to the correct cylinder.
16. Remove the fuel supply line from the fuel rail.
17. Remove the automatic transmission throttle cable, if equipped, to gain access to the fuel rail.
18. Remove the fuel rail mounting bolts and remove the fuel rail.
19. Transfer the injectors from the original fuel rail to the new rail.
20. Lubricate the injector O-rings with clean engine oil and insert the new fuel rail into the manifold.
21. Install the fuel rail and tighten the mounting bolts to 11 Nm (100 in. Lbs.).
22. Connect the injector harness connectors to the injectors making sure to install them to correct injector tagged earlier.
23. Connect the fuel line to the fuel rail.
24. Remove the plug from the intake manifold in the location shown below. ([See Illustration](#))
25. Install the vacuum fitting provided in the kit in the location of the removed plug.
26. Install the vacuum tube and connect it to the pressure regulator and the fitting on the manifold.
27. Connect the battery negative cable.
28. Install the fuel tank filler cap.
29. Select and install the appropriate VECI label over the original label with the revised label indicated on the conversion sheet supplied in the fuel rail kit.

POLICY:

Reimbursable within the provisions of the warranty.

TIME ALLOWANCE:

Labor Operation No.	Description	Time
14-70-14-94	Replace fuel rail & install vacuum fitting.	0.5 Hrs.
08-19-46-96	Reprogram Power Train Control Module.	0.5 Hrs.

FAILURE CODE:

Code	Description
FM	Flash Module