



TO: Service Locations

FROM: Technical Support Development

SUBJECT: **EPA07 MBE 900 New MCM Software v9.6.1.0 and CPC Software r3.00**

ISSUE

Several complaints have been received on the EPA07 MBE 900 engine for the following codes:

- SPN 1636, FMI 2 - Intake Manifold Temperature Plausibility Error
- SPN 3597, FMI 3 - Proportional Valve Bank 1 Circuit Failed High
- SPN 615, FMI 14 – Turbocharger/Supercharger Boost System Performance
- SPN 3719, FMI 16, 0, 31, and 15 – Relating to high soot levels and/or DPF Zone 2 or 3 conditions.
- SPN 132, FMI 14 - HC Doser Fuel Pressure Not Plausible or Air Mass Calibration Exceeded Range Limit

CAUSE

SPN 1636/2 is related to the use of a block heater and/or supplemental heater (such as a Webasto) in cold ambient temperatures. These heaters are typically used for a period of time before the engine is started, which then raises the temperature of the coolant in the cylinder block and subsequently the Intake Manifold Temperature Sensor. When the engine is started, the MCM detects the elevated intake manifold temperature versus some colder non-engine mounted sensors and logs this fault code.

SPN 3597/3 is related to the grid heater. This fault is logged when the starter is active prior to the proportional valve bank 1 being powered up in the MCM. The starter back-feeds voltage through the grid heater into the proportional valve bank 1 output of the MCM, which then logs this fault code.

SPN 615/14 is related to the actual inlet manifold pressure (turbocharger boost) compared to a desired value in the fuel map. When the difference between the two pressures is large OR small enough, this fault code is logged. Leaks in the air inlet and exhaust system can also cause this code.

SPN 3719/16, 0, 31, and 15 may be related to operation in cold ambient temperatures. The coolant temperature does not get high enough for the engine to enter Thermal Management mode (operation of the intake throttle valve and exhaust flap). Thermal Management mode raises the exhaust gas temperature in preparation for over-the-road regeneration of the DPF. If the engine does not enter Thermal Management mode, over-the-road regeneration of the DPF does not occur, which can lead to a plugged DPF.

SPN 132/14 is related to the Air Mass Adaptation. Older MCM software identifies this code as HC Doser Fuel Pressure Not Plausible when it is really Air Mass Calibration Exceeded Range Limit. When the engine performs an Air Mass Adaptation and records a value that exceeds a limit, this code is generated.

REQUIRED ACTION

New MCM software v9.6.1.0 and associated fuel maps have been released to reduce the logging of these fault codes. Corresponding CPC software r3.00 was also released.

For SPN 1636/2, the maximum allowed temperature difference between the three sensors has been increased to prevent this code from being logged.

For SPN 3597/3, the Amber Warning Light (AWL) has been disabled for this fault. This means the fault code may still be logged by the MCM, but the AWL will not be illuminated. Also, it should be noted that by delaying cranking the engine until the instrument panel has finished the gauge sweep and bulb check after the ignition has been turned on should prevent this code from being logged at all.

For SPN 615/14, the pressure difference between actual and desired inlet manifold pressure has been increased to prevent this code from being logged. Do not rely on reprogramming to fix this code. Please note that with the new MCM software v9.6.1.0, the Turbocharger/Supercharger Boost System Performance code has been reassigned from SPN 615, FMI 14 to SPN 2631, FMI 2.

For SPN 3719/16, 0, 31, and 15, the coolant temperature limit to enter Thermal Management mode has been decreased from 72° C (162° F) to 35° C (96° F). In extremely cold ambient temperatures, full-time use of a supplemental heater such as a Webasto will slightly raise the coolant temperature and improve the chances of over-the-road regenerations. A winter front may also be used to raise coolant temperature and improve vehicle heating. At least 25% of the grill opening should remain open in sectioned stripes that run perpendicular to the charge air cooler tube flow direction. This assures even cooling across each tube and reduces header to tube stress and possible failure. Winter fronts should only be used when the ambient temperature remains below -12.2° C (10° F). It should be noted that other mechanical issues such as plugged fuel filters, faulty doser blocks or doser valves, stuck overflow valves, etc., can also cause the 3719 code. These systems should be thoroughly checked when encountering this code. Do not rely on reprogramming to fix this code. Even with these improvements, over-the-road regeneration may be difficult to achieve in severe cold ambient conditions and parked regenerations may be needed.

For SPN 132/14, the limits have been increased to reduce the chance of this code being logged.

REPAIR PROCEDURE

Before programming the MCM and CPC, you **MUST** have DDRS 7.02 with Service Pack 1. Reference Technical Service letter [07 TS-63](#). Note that you **MUST** have DDRS 7.02 properly installed on your computer before updating to Service Pack 1. Reference CSA letter [07 CSA-27](#).

You **MUST** use the Nexiq USB Link to program the MCM and CPC. Reference Technical Service letters [07 TS-52](#) and [07 TS-18](#).

To program the MCM to software v9.6.1.0 and the CPC to corresponding new software r3.00, you **MUST** program **BOTH** devices to these software levels:

1. You **MUST** select the "Update Device Software" function in the DDRS system when programming the MCM and CPC.
2. After the download for both the MCM and CPC is complete, click the "Finish" button. Turn the vehicle ignition OFF, disconnect the USB Link at either the computer port or vehicle diagnostic port, and wait one minute. Turn the vehicle ignition ON, wait one minute, reconnect the USB Link cable, and reconnect DDRS 7.02 with Service Pack 1 to the MCM and CPC. Reference Technical Service letter [07 TS-53](#).
3. Verify the new MCM and CPC software have been downloaded by looking at the "Identification" screen in DDRS 7.02 with Service Pack 1. The MCM software version must be "9.6.1.0" and the CPC software version must be "R03_00_000a". See Figure 1.

The screenshot displays a diagnostic tool interface with a sidebar on the left containing menu items: Identification, Fault Codes, Troubleshooting, Instrumentation, Service Routines, Parameters, Program Device, Flash, and Application Status. The main area is titled 'Identification' and has tabs for Common, Audit Trail, Stored Data, and Rating. The 'Common' tab is active, showing data for two modules: CPC2 and MCM.

CPC2

Device Configuration	
Software Mode	Running in Application

Device Information	
Software Version	R03_00_000a
Diagnosis Version	17
ECU Serial Number	07.0087.00074
ECU Part Number	A002 446 71 02 ZGS 001
Hardware Part Number	A002 446 60 02 ZGS 001
Software Part Number	A012 448 89 02 ZGS 001
Software Date	11/8/2007 7:00:00 AM Eastern Standard Time
Real Time Clock	4/15/2018 5:30:30 PM Eastern Standard Time

Vehicle Identification	
VIN	4UZA88RDJ69CA46719
Engine Serial Number	926963S0000227
Odometer	0.0

MCM

Device Configuration	
Fuelmap Part Number	A003 448 53 35 ZGS 004
Fuel Map Description	B_961_GRS014S023
Certification Number	926LA_071_250/660
Software Mode	Running in Application
Rating Code	

Device Information	
Software Version	9.6.1.0
Diagnosis Version	60
ECU Serial Number	7EA50001
Hardware Part Number	A005 446 20 40 ZGS 001
Software Part Number	A005 446 20 40 ZGS 001

Vehicle Identification	
VIN	4UZA88RDJ69CA46719
Engine Serial Number	926963S0000227
Engine Type	MBE900

Annotations on the screenshot:

- Click "Identification"
- Confirm CPC software is R03_00_000a
- Confirm fuelmap part number ends with "ZGS 004"
- Confirm MCM software is 9.6.1.0

Figure 1 – Software and Fuel Map Identification

4. Verify the fuel map has been downloaded by looking at the fuel map part number under the MCM heading. The fuel map part number must be one of the following listed in Table 1. See Figure 1.

Application	Rating (HP/Torque)	Fuel Map Part Number
Truck	190/520	A003 448 43 35 ZGS 004
Truck	210/520	A003 448 44 35 ZGS 004
Truck	210/620	A003 448 45 35 ZGS 004
Truck	230/660	A003 448 46 35 ZGS 004
Truck	250/660	A003 448 47 35 ZGS 004
Truck	230/620	A003 448 48 35 ZGS 004
School Bus	190/520	A003 448 49 35 ZGS 004
School Bus	210/520	A003 448 50 35 ZGS 004
School Bus	210/620	A003 448 51 35 ZGS 004
School Bus	230/660	A003 448 52 35 ZGS 004
School Bus	250/660	A003 448 53 35 ZGS 004
School Bus	230/620	A003 448 54 35 ZGS 004

Table 1 – Fuel Map Part Numbers

5. If the Diesel Particulate Filter (DPF) is not in zone 0, perform a parked regeneration of the Aftertreatment System. To check the DPF zone, click on the “Instrumentation” button and then select the “EGR” tab. See Figure 2.

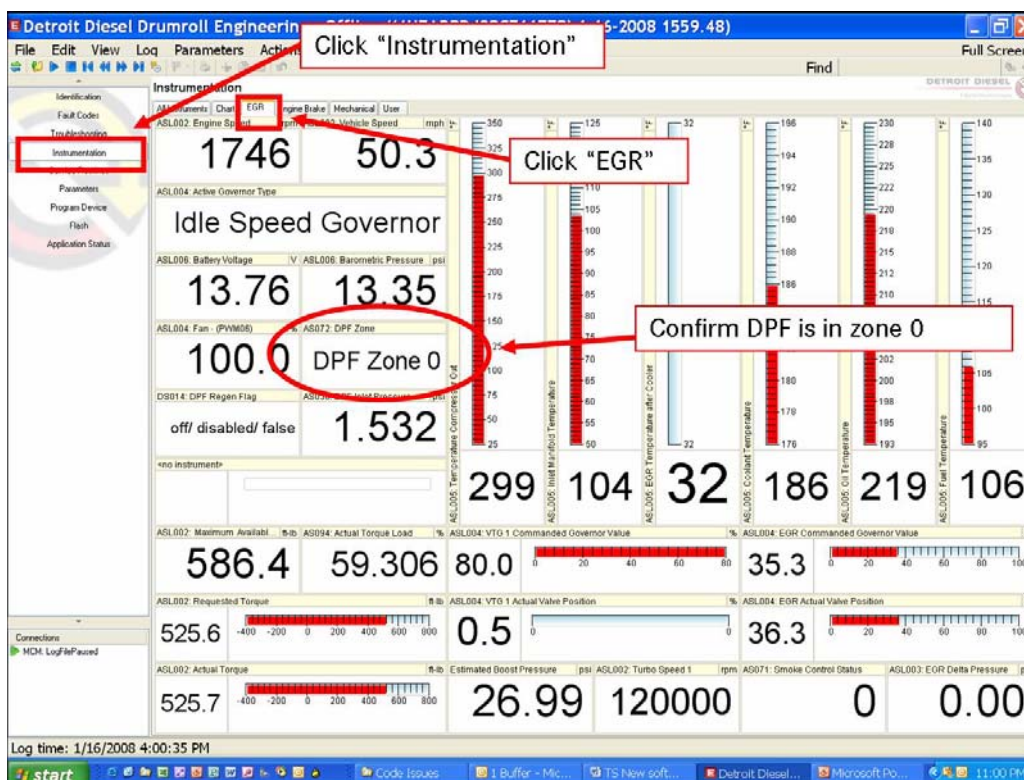


Figure 2 – DPF Zone Identification

6. Start the engine and perform an Air Mass Adaptation. Click on “Service Routines” and then select the “Air Mass Adaptation” tab. Before starting an Air Mass Adaptation, you must do the following:
- Ensure both the MCM and CPC are connected with DDRS 7.02 with Service Pack 1.
 - Ensure there are no active or inactive codes in both the MCM and CPC.
 - Engine must be running at base (low) idle.
 - Engine oil and coolant temperature must be above 40° C (104° F).
 - DPF must be in zone 0.

CLAIM PROCESS

Use the following information when filing claims:

Claim Type:	01
Fault Type	83
Primary Failed Part:	REPROGRAM
Labor OP 062600:	1.0 HOUR (Reprogram only) or 1.7 HOURS (Reprogram and Parked Regeneration)
Parts Return:	NONE

CONTACT INFORMATION

Please contact the Detroit Diesel Customer Support Center at 313-592-5800 or email csc@detroitdiesel.com if you have any questions.