

## ATS Technician's Guide

**NUMBER:** 1 03-09   **S.M. REF.:** 12.1   **ENGINE:** ATS   **DATE:** January 2009

**SUBJECT:** SPN 3250/FMI 0

**PUBLICATION:** DDC-SVC-MAN-0036

The procedure to check SPN 3250/FMI 0 was changed.

### **SPN 3250/FMI 0**

This diagnostic condition is typically DOC Outlet Temperature too high.

### **CHECK FOR DOC OUTLET TEMPERATURE TOO HIGH**

Check as follows:

#### **NOTE:**

Do not perform a Parked Regeneration prior to running this diagnostic. The contamination evidence will be eliminated during the regeneration.

1. Shut off the engine, apply the parking brake, chock the wheels, and perform any other applicable safety steps.
2. Connect DDDL 7.X.

#### **NOTE:**

This diagnostic procedure requires DDDL 7.03 SP3 or higher. All references to 7.X in this procedure designate 7.03 SP3 or higher.

3. Turn ignition ON (key ON, engine OFF).
4. Check for multiple fault codes.

[a] If fault codes other than 3250/0 are active, troubleshoot the other fault codes first.

#### **NOTE:**

Do not troubleshoot fault codes 3246/0 and 3246/16 first as they can be related to the cause of 3250/0.

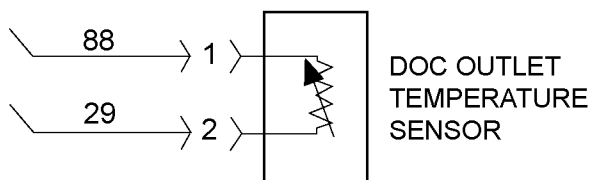
[b] If only 3250/0 and related fault codes are present, go to step 5.

5. Monitor DOC Outlet Temperature.

- [a] If the temperature is greater than 760°C (1400°F), go to step 8.
- [b] If the temperature is less than 760°C (1400°F), go to step 6.

 <b>WARNING:</b> <b>ENGINE EXHAUST</b>
<b>To avoid injury from inhaling engine exhaust, always operate the engine in a well-ventilated area. Engine exhaust is toxic.</b>

- 6. With DDDL 7.X connected, run the engine at 1200 rpm for 10 minutes.
- 7. Monitor DOC Inlet and Outlet Temperatures. Are the temperatures within 25°C (45°F) of each other?
  - [a] If yes, go to step 10.
  - [b] If no, go to step 8.
- 8. Turn ignition OFF.
- 9. Disconnect DOC Outlet Temperature Sensor and inspect connector for damaged, bent, spread, or corroded pins. If Temperature Sensor connector is OK, check connections upstream of the MCM (ATD harness 10-pin connector pin 5, VIH 31-pin connector pin 17, and MCM 120-pin connector pin 29). See Figure 1.



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**Figure 1 DOC Outlet Temperature Sensor**

- [a] If harness damage is found, repair as necessary.
  - [b] If no harness damage is found, replace the DOC Outlet Temperature Sensor; refer to section "Temperature Sensor Removal."
10. Is the engine a Series 60?
- [a] If yes, go to step 11.
  - [b] If no, go to step 14.
11. Perform an Automatic Cylinder Cutout Service Routine using DDDL 7.X.

**NOTE:**

Detroit Diesel Service Letter **08 TS-22Rev** gives assistance with running and analyzing the Automatic Cylinder Cutout Service Routine.

12. Retain a log file of the Automatic Cylinder Cutout Service Routine.
13. Was a faulty injector identified?
- [a] If yes, replace the faulty injector, repeat the Automatic Cylinder Cutout Service Routine to verify repairs, and go to step 26.
  - [b] If no, go to step 16.
14. Perform an Idle Speed Balance Test using DDDL 7.X. Retain the log file.
15. Was a faulty injector/cylinder identified?
- [a] If yes, repair the faulty injector/cylinder, repeat the Idle Speed Balance Test to verify repair, and go to step 26.
  - [b] If no, go to step 16.
16. Remove the ATD.

17. Disassemble the ATD and inspect the inlet face of the DPF substrate for contamination.

- [a] If coolant contamination is found (white residue on inlet face of the DPF and a sweet smell from exhaust), go to step 18. See Figure 2.



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**Figure 2 DPF Inlet with Coolant Residue**

- [b] If oil contamination is found (oil residue or paste on DPF inlet face or an oil lacquer on the inlet flange), go to step 21.
- [c] If fuel contamination is found (inlet flange washed clean), go to step 23.
- [d] If no contamination is found, obtain pictures of the inlet flange, DOC Outlet face, and DPF Inlet and Outlet faces. Contact the Detroit Diesel Customer Support Center at 313-592-5800 with these pictures and the log files from the Automatic Cylinder Cutout Service Routine or the Idle Speed Balance Test.
18. Question operator about coolant usage.
19. Visually inspect coolant reservoir for low level. Possible causes for coolant contamination in ATD are:
- EGR Cooler leaks
  - Failed/defective cylinder head gasket, improper head bolt torque, low liner height
  - Failed Air Compressor cylinder head
  - Failed Fuel Cooler (HDE)
  - Fuel Doser body cracked, missing or failed seals
20. Repair the cause of coolant entry as necessary and go to step 25.


21. Question operator about excessive oil consumption. Possible causes of excessive oil consumption are:
  - Defective turbine wheel seal
  - Turbocompound failure (Axial Power Turbine air seal)
  - Worn exhaust valve seals
  - Defective Crankcase Breather system
22. Repair the cause of oil contamination and go to step 25.
23. Inspect the ATD components for fuel contamination. Possible causes for fuel contamination in ATD are:
  - Failure to drain cylinder head during injector replacement

**NOTE:**

If fault code sets right after injector replacement, then this is the most likely cause.

- Use of non-recommended fuels and fuel additives
  - Low turbocharger boost
  - Engine brake stuck on
24. Repair the cause of fuel contamination and go to step 25.
  25. Re-install the original ATD.

**NOTE:**

 <b>WARNING:</b> <b>HOT EXHAUST</b>
<b>During parked regeneration the exhaust gases will be extremely HOT and could cause a fire if directed at combustible materials. The vehicle must be parked outside.</b>

26. Perform a parked regeneration and email all log files from this troubleshooting procedure to the Detroit Diesel Customer Support Center.
  - [a] If the regeneration is successful, go to step 27.

**NOTE:**

The parked regeneration is successful if the DOC Out Temperature is within 100°C (180°F) of the DOC Model Delay.

- [b] If the regeneration is not successful, go to step 16.
27. Replace DOC and DPF, re-install ATD, and go to step 28.
  28. Perform a parked regeneration, reset ash accumulators, and email a log file of the successful regeneration to Detroit Diesel Customer Support Center. Verify repairs.

### **ADDITIONAL SERVICE INFORMATION**

Additional service information is available in the Detroit Diesel *Aftertreatment System Technician's Guide* (DDC-SVC-MAN-0036). The next revision to this manual will include the revised information.

**DETROIT DIESEL**  
CORPORATION



13400 Outer Drive, West / Detroit, Michigan 48239-4001  
Telephone: 313-592-5000  
[www.detroitdiesel.com](http://www.detroitdiesel.com)