DETROIT DIESEL®

ATS Technician's Guide

NUMBER: 1–**ATS**–07 **S.M. REF.:** Listed in Table 1 **ENGINE:** ATS **DATE:** April 2007

SUBJECT: CHANGES IN TROUBLESHOOTING

PUBLICATION: 7SE63

The *Aftertreatment System Technician's Guide* has been revised.

MANUAL REFERENCE

Section	Change
5.3.1, Hazardous Applications	The definitions for the two CPC options were changed to clarify their function.
7.1, SPN 51/FMI 2	FMI 2 with its troubleshooting procedure was added to SPN 51.
10.3, SPN 3246/FMI 3	The directions in step 2 of the troubleshooting procedure were changed for SPN 3246/FMI 3.
11.3, SPN 3250/FMI 3	The directions in step 2 of the troubleshooting procedure were changed for SPN 3250/FMI 3.
16.2, SPN 3556/FMI 1	The directions in step 6 of the troubleshooting procedure for SPN 3556/FMI 1 were changed.
19, SPN 3719	For SPN 3719, FMI 14 was changed to FMI 31. FMI 15 and 31 were defined as silent codes.

Table 1 Manual Revisions

HAZARDOUS APPLICATIONS

The MCM should be configured to not allow automatically triggered over-the-road regenerations (DPF Manual Regen Only Enable = Enabled).

NOTE:
This is for hazardous applications only.

There are two CPC options:

- DPF Stationary Regen Only = 0 Disabled
- DPF Stationary Regen Only = 1 Enabled

DPF Stationary Regen Only = 0 — Disabled

This option allows the DPF Regeneration Switch to request a parked regeneration if the parked regeneration entry conditions are met. This option also allows MCM-initiated over-the-road regenerations to occur.

DPF Stationary Regen Only = 1 — Enabled

This option **only** allows a parked regeneration to occur by using the DPF Regeneration Switch. The MCM will be unable to initiate an active over-the-road regeneration when this option is enabled.

SPN 51/FMI 2

This diagnostic condition is typically Intake Throttle Position deviation error.

CHECK FOR DEVIATION ERROR

Check as follows:

1. Clear codes.
2. Turn ignition ON (key ON, engine OFF) and listen for the Intake Throttle Valve to sweep.
3. Was an audible sweep heard and are no faults active?
   [a] If yes, repeat step 1 and step 2. If still yes after repeating steps, test is complete. Verify repairs.
   [b] If no, go to step 4.
4. Disconnect intake throttle valve connector and inspect for bent, damaged, or corroded pins.
   [a] If pin damage is found, repair as necessary. Verify repairs.
   [b] If no pin damage is found, replace the Intake Throttle Valve. Verify repairs.

SPN 3246/FMI 3

This diagnostic condition is typically DPF Outlet Temperature Sensor circuit failed high.

CHECK FOR CIRCUIT FAILED HIGH

Check as follows:

1. Turn ignition ON (key ON, engine OFF).
2. Check for multiple codes.
   [a] If 3246/3, 3242/3, 3250/3, and 1172/3 are present, go to step 3.
   [b] If only 3246/3 is present go to step 5.
3. Disconnect the Turbo Compressor Inlet Temperature sensor.
4. Measure the voltage between pin 1 of the Turbo Compressor Inlet Temperature and ground (battery ground lug by starter).
   [a] If the voltage is greater than 2.75 volts, repair the short to power between pin 88 of the 120–pin MCM connector and the Turbo Compressor Inlet, DOC Inlet, DOC Outlet, and DPF Outlet temp sensors. Verify repairs.
   [b] If no voltage is present on pin 1 of the intake air sensor, repair the open between pin 88 of the 120–pin MCM connector and the Turbo Compressor Inlet, DOC Inlet, DOC Outlet, and DPF Outlet temp sensors. Verify repairs.
5. Disconnect the DPF Outlet Temperature Sensor. See Figure 1.

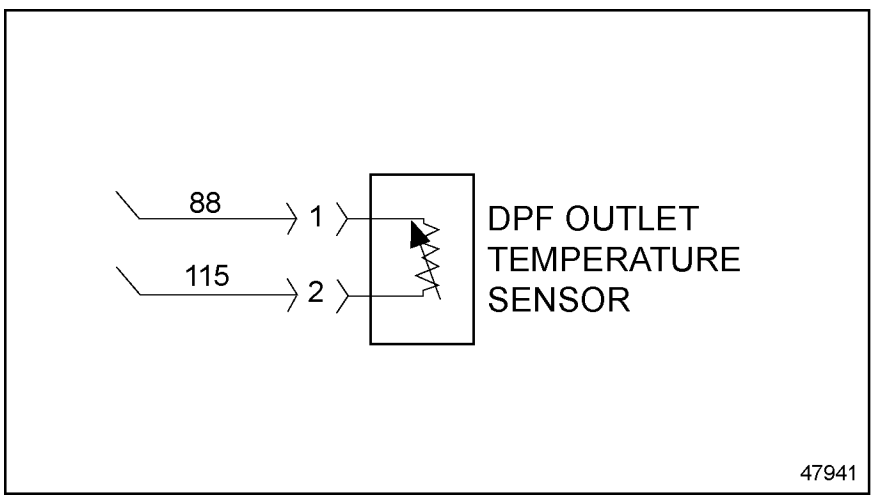

Figure 1 DPF Outlet Temperature Sensor

6. Check resistance between pin 1 and pin 2 of the DPF Outlet Temperature Sensor. Listed in Table 2 are the acceptable resistances.

Temperature °C (°F)	Resistance Ω
0 (32)	202.50
25 (77)	221.60
100 (212)	277.90
600 (1112)	619.80
850 (1562)	768.81

Table 2 ATD Temperature Sensor Resistance Chart

[a] If resistance is out of range, replace the DPF Outlet Temperature Sensor.

[b] If resistance is within range, go to step 7.

7. Turn ignition ON (key ON, engine OFF).
8. Measure voltage between pin 1 and pin 2 of the DPF Outlet Temperature Sensor connector.

[a] If the voltage is between 2.75 and 3.25 volts, verify repairs.

[b] If the voltage is less than 2.75 volts, go to step 9.

9. Measure voltage between pin 2 of DPF Outlet Temperature Sensor connector and ground (battery ground lug by starter).

[a] If the voltage is between 2.75 and 3.25 volts, then repair open in wire between pin 88 of the 120-pin MCM connector and pin 1 of the DPF Outlet Temperature Sensor connector. Verify repairs.

[b] If the voltage is less 2.75 volts, then repair open in wire between pin 2 of the DPF Outlet Temperature Sensor connector and pin 89 of the 120–pin MCM connector. Verify repairs.

SPN 3250/FMI 3

This diagnostic condition is typically DPF Inlet Temperature Sensor circuit failed high.

CHECK FOR CIRCUIT FAILED HIGH

Check as follows:

1. Turn ignition ON (key ON, engine OFF).
2. Check for multiple codes.
   [a] If 3250/3, 3242/3, 3246/3, and 1172/3 are present, go to step 3.
   [b] If only 3250/3 is present, go to step 5.
3. Disconnect the Turbo Compressor Inlet Temperature sensor.
4. Measure the voltage between pin 1 of the Turbo Compressor Inlet Temperature and ground (battery ground lug by starter).
   [a] If the voltage is greater than 2.75 volts, repair the short to power between pin 88 of the MCM 120-pin connector and the Turbo Compressor Inlet, DOC Inlet, DOC Outlet, and DPF Outlet temperature sensors. Verify repairs.
   [b] If no voltage is present on pin 1 of the intake air sensor, repair the open between pin 88 of the MCM 120-pin connector and the Turbo Compressor Inlet, DOC Inlet, DOC Outlet, and DPF Outlet temperature sensors. Verify repairs.
5. Disconnect the DPF Inlet Temperature Sensor.
6. Check resistance between pin 1 and pin 2 of the DPF Inlet Temperature Sensor. Acceptable resistance is listed in Table 3.

Temperature °C (°F)	Resistance Ω
0 (32)	202.50
25 (77)	221.60
100 (212)	277.90
600 (1112)	619.80
850 (1562)	768.81

Table 3 ATD Temperature Sensor Resistance Chart

   [a] If resistance is out of range, replace the DPF Inlet Temperature Sensor. Verify repairs.
   [b] If resistance is within range, go to step 7.

7. Turn ignition ON (key ON, engine OFF).
8. Measure voltage between pin 1 and pin 2 of the DPF Inlet Temperature Sensor connector.
   [a] If the voltage is between 2.75 and 3.25 volts, verify repairs.
   [b] If the voltage is less than 2.75 volts, go to step 9.
9. Measure voltage between pin 2 of DPF Inlet Temperature Sensor connector and ground (battery ground lug by starter).
   [a] If the voltage is between 2.75 and 3.25 volts, then repair open in wire between pin 88 of the 120-pin MCM connector and pin 1 of the DPF Inlet Temperature Sensor connector. Verify repairs.
   [b] If the voltage is less 2.75 volts, then repair open in wire between pin 2 of the DPF Inlet Temperature Sensor connector and pin 29 of the 120–pin MCM connector. Verify repairs.

SPN 3556/FMI 1

This diagnostic condition is typically Regen Temperature – Out of Range Low.

CHECK FOR REGEN TEMPERATURE – OUT OF RANGE LOW

Check as follows:

1. Visually inspect Doser Block Assembly and fuel lines for external fuel leaks.
   [a] If fuel leaks found, repair as necessary. Verify repairs.
   [b] If no leaks found, go to step 2.
2. Visually inspect exhaust system for leaks including ATD V-band clamps.
   [a] If leaks found, repair as necessary. Verify repairs.
   [b] If OK, go to step 3.
3. Disconnect DOC Outlet Temperature Sensor. See Figure 2.

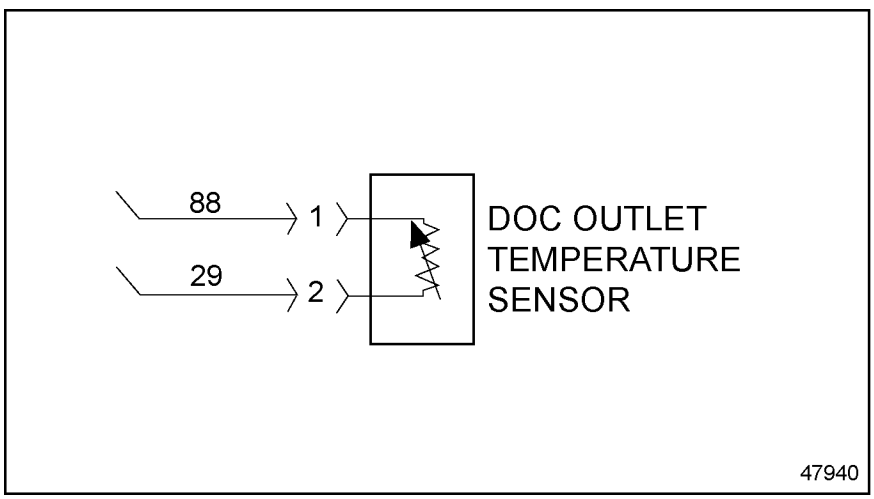

Figure 2 DOC Outlet Temperature Sensor

4. Check DOC Outlet Temperature Sensor resistance as listed in Table 4.

Temperature °C (°F)	Resistance Ω
0 (32)	202.50
25 (77)	221.60
100 (212)	277.90
600 (1112)	619.80
850 (1562)	768.81

Table 4 ATD Temperature Sensor Resistance Chart

[a] If the resistance is out of specification, replace DOC Outlet Temperature Sensor, go to step 8.

[b] If the resistance is within specification, go to step 5.

5. Using DDDL 7.0 or latest version, activate a Parked Regeneration.
6. Once the Fuel Cutoff Valve opens, monitor the Fuel Compensation Pressure.

[a] If fuel pressure is greater than 660 kPa (95 psi), abort the regen and go to step 7.

[b] If fuel pressure is less than 450 kPa (65 psi); abort the regen, repair the cause of the low fuel pressure, and go to step 9.

[c] If fuel pressure is between 450 – 660 kPa (65 – 95 psi), verify repairs.

7. Replace the Fuel Doser Valve (FDV), go to step 8.
8. Using DDDL 7.0 or latest version, perform Doser Fuel Line Purge Service Routine.
9. Perform Parked regeneration. After regeneration is complete, clear fault code codes.

SPN 3719/FMI 15

This diagnostic condition is a silent code that logs when the DPF Regeneration Lamp is flashing in regen Zone 3.

NOTE:
This code is informational only and used by service to help understand which dash lights illuminated during normal service. A stationary regen is required if the fault code is active. No action is required for an inactive fault code.

SPN 3719/FMI 31

This diagnostic condition is a silent code that logs when the DPF Regeneration Lamp is flashing in regen Zone 2.

NOTE:
This code is informational only and used by service to help understand which dash lights illuminated during normal service. A stationary regen is required if the fault code is active. No action is required for an inactive fault code.

ADDITIONAL SERVICE INFORMATION

Additional service information is available in the Detroit Diesel *ATS Technician's Guide,* 7SE63. The next revision to this manual will be in July 2007.

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