P3770

Fault code description

Diesel oxidation catalyst (DOC) - not detected

Fault code information

Possible cause

1. Malfunctioning fuel dosing module.
2. Missing or contaminated Diesel Oxidation Catalyst (DOC).
3. Tampering with the EAS system.
4. Reversed or malfunctioning EAS temperature sensors.
5. Dirty or damaged pins/connectors.
6. Clogged secondary fuel filter.

Additional information

This diagnostic checks for a temperature increase across the DOC during an active regeneration of the DPF system to detect the presence of the DOC. This fault code will change to active when the exhaust gas temperature before DOC sensor and the exhaust gas temperature before DPF sensor read the same temperature.

Active DPF regeneration will be disabled.

This fault will cause the Exhaust Gas Recirculation (EGR) operation to be disabled to protect the system from additional damage. The EGR disable fault is P1496. After a given run time with an active P1496, P1495, EGR failure detected, will become active. This is to further protect the system and requires no troubleshooting; it must only be reset once the P3770 has been resolved.

Set condition of fault code

This diagnostic runs when the DPF system is being actively regenerated to reduce soot.

The EAS-3 ECU detects that the exhaust gas temperature before DOC sensor and the exhaust gas temperature before DPF sensor are reading the same temperature during an active regeneration of the DPF system.

Reset condition of fault code

This fault code will change to inactive as soon as the diagnostic runs and passes.

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P3770, Diagnostic information

Technical data

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Location of component(s)

"Location information, EAS-3"

Electrical diagram(s)

Refer to the OEM service manual for more information.

Description of component(s)

"DPF unit"

Block diagram

"Block diagram EAS-3"

Step by step troubleshooting

Please perform the troubleshooting steps below using the breakout harness if necessary to check electrical components such as sensors, electrical control units or harnesses. Back probing is not recommended as it can damage the harness. The ignition should always be in the OFF position when connecting or disconnecting electrical components to reduce the likelihood of damage to electrical components.

- Disconnecting the EAS connectors during the troubleshooting process will result in multiple errors.
- For specific electrical component information and pin out locations, always refer to the technical data.
- It is necessary to exit the fault code menu in DAVIE and run the diagnostic test again to identify a

change in errors.

- Remember that the truck's operational or mechanical issues may be the root cause of both active and inactive fault codes. Refer to the 'possible causes' section.

Step by step 1: Check fault codes

Step 1A: Check for fault codes

Troubleshooting steps

1. Turn the key switch ON.
2. Use DAVIE to check for fault codes.

Is the fault code P3750, P3751, P3752, P3753, P3754 or P3755, P3769, P3830, P3831, P3832, P3833, P3834, P3835, P3836 or P3837 active?

- Yes – Proceed with the appropriate fault tree.
- No – Proceed to step 2A.

Step by step 2: Check the secondary fuel filter

Step 2A: Inspect for a clogged secondary fuel filter

Troubleshooting steps

1. Turn the key switch OFF.
2. Check the secondary fuel filter for blockage.

Is blockage found in the secondary fuel filter?

- Yes – Replace the secondary fuel filter. Proceed to step 3A.
- No – Proceed to step 3A.

Step by step 3: Inspect the fuel intake module

Step 3A: Inspect the fuel intake module

Troubleshooting steps

1. Turn the key switch OFF.
2. Perform the fuel shut-off valve leak test.
3. Inspect the intake module, fuel lines and fuel line connections for leaks.
4. Remove the fuel intake module
5. Inspect the fuel inlet and outlet ports of the fuel module for blockage.

Is debris or leakage found?

- Yes – Remove any debris that is found. If the fuel intake module is leaking, contact the Engine Support Center as it may need to be replaced. Proceed to step 7A
- No – Proceed to step 4A.

Step by step 4: Check the fuel dosing module

Step 4A: Inspect the fuel dosing module and related circuit connector pins

Troubleshooting steps

1. Turn the key switch OFF.
2. Unplug the connectors for the fuel dosing module circuit.
3. Inspect the connectors for the following problems:
   - Corroded or dirty pins
   - Damaged pins
   - Pushed back or expanded pins
   - Loose connector
   - Moisture in or on the connector
   - Connector shell damaged
   - Missing or damaged connector seals
   - Wire insulation damage
4. Clean connectors with electrical contact cleaner.

Are any of the pins/connectors dirty or damaged?

- Yes – A dirty or damaged connection has been detected. Clean, repair or replace the damaged connection or harness if possible. Proceed to Step 4B.
- No – Proceed to step 4B.

Step 4B: Inspect the fuel dosing module for leaks

Troubleshooting steps

1. Turn the key switch OFF.
2. Visually inspect the exhaust system between the turbo charger outlet and the aftertreatment system for exhaust leaks.

Are there leaks or blockages?

- Yes – Repair the leaks and remove the blockages. Proceed to Step 4C.
- No – Proceed to step 4C.

Step 4C: Inspect the fuel dosing module

Troubleshooting steps

1. Turn the key switch OFF.
2. Remove the fuel dosing module.
3. Turn the key switch ON.
4. Place the fuel dosing module in a measuring container, then cover the measuring container.
5. Perform the 'fuel dosing module leak test', 'fuel shut-off valve leak test' and 'fuel dosing system override test'. For more information, see 'Explanatory Notes to DAVIE'.
6. Check that the fuel line going to the fuel dosing module is not kinked. Blow shop air through the fuel line to the fuel dosing module to check that there is no internal blockage.

Does the fuel dosing module meet the specifications?

- Yes – Proceed to step 5A.
- No – Repair the leaks and remove the blockages as needed. Proceed to step 4D.

Step 4D: Inspect the fuel dosing module injector tip

Troubleshooting steps

1. Turn the key switch OFF.
2. With the fuel dosing module still removed.
3. Inspect the fuel dosing module on:
   - Build-up of carbon around the injector tip.
   - Corroded injector tip.

Does the fuel dosing module have an excessive build-up of carbon or corrosion around the tip of the injector?

- Yes – If there is a build-up of carbon, remove the carbon build-up and proceed to Step 3E. If there is corrosion, replace the fuel dosing module and proceed to Step 7A.
- No – Proceed to step 4E.

Step 4E: Re-inspect the fuel dosing module

Troubleshooting steps

1. Turn the key switch ON.
2. With the fuel dosing module still removed.
3. Place the fuel dosing module in a measuring container, then cover the measuring container.
4. Perform the 'fuel dosing module leak test', 'fuel shut-off valve leak test' and 'fuel dosing system override test'. For more information, see 'Explanatory Notes to DAVIE'.

Does the fuel dosing module meet the specifications?

- Yes – Proceed to step 5A.
- No – Failed fuel dosing module. Replace the fuel dosing module. Proceed to step 7A.

Step by step 5: Check the DOC and the DPF

Step 5A: Inspect the DOC for damage or face plugging

Troubleshooting steps

1. Turn the key switch OFF.
2. Remove the DOC.
3. Check the DOC for: presence, blockage of particulates and/or oil contamination in the catalyst, cracks or damage to any cells in the catalyst.

Is the DOC damaged or face plugged?

- Yes – If the DOC housing is damaged, replace it and proceed to Step 4B. If it is face plugged, attempt to remove the face plugging and proceed to Step 5B.
- No – Contact the Engine Support Center. Proceed to step 5B.

Step 4B: Inspect the DPF for damage or plugging

Troubleshooting steps

1. Turn the key switch OFF.
2. With the DPF already removed, check for blockage of particulates and/or oil contamination. Check for cracks or damage to any cells in the catalyst.

Is the DPF damaged or face plugged?

- Yes – If the DPF is damaged, replace it and proceed to Step 6A. If the DPF is face plugged, contact the Engine Support Center for further instructions.
- No – Proceed to step 6A.

Step by step 6: Check the temperature sensors

Step 6A: Compare the DOC, DPF and SCR sensors

Troubleshooting steps

The following steps must be completed when the truck is cold and has not recently been regenerated. If the truck is not cold, wait until the truck is cold before performing this step.

1. Turn the key switch ON.
2. If the truck is fully cooled, compare the temperature readings of the DOC temperature sensor, the DPF temperature sensors and the SCR temperature sensor.
3. Observe the EAS faults or Values in DAVIE.

Are the temperature sensors within 20°F of each other?

- Yes – Proceed to step 6B.
- No – Replace the sensor that is not within 20°F of the other two sensors. Proceed to Step 6B.

Step 6B: Inspect DOC Inlet temperature sensor

Troubleshooting steps

1. Turn the key switch ON.
2. Observe the EAS faults or Values in DAVIE
3. Unplug the DOC inlet temperature sensor on the DPF unit

Does the P3750 fault occur?

- Yes – Plug in DOC inlet temperature sensor. Proceed to step 6C.
- No – Record which faults occurred or check that the DOC inlet temperature sensor value is -40°F. Plug in DOC inlet temperature sensor – Proceed to step 6C.

Step 6C: Inspect DOC outlet temperature sensor

Troubleshooting steps

1. Turn the key switch ON.
2. Clear the faults.
3. Observe the EAS faults or Values in DAVIE.
4. Unplug the DOC outlet temperature sensor on the DPF unit

Does the P3753 fault occur?

- Yes – Plug in DOC outlet temperature sensor. Proceed to step 6D.
- No – Record which faults occurred or check that the DOC outlet temperature sensor value is -40°F. Plug in DOC outlet temperature sensor – Proceed to step 6D.

Step 6D: Inspect DPF outlet temperature sensor

Troubleshooting steps

1. Turn the key switch ON.
2. Clear the faults.
3. Observe the EAS faults or Values in DAVIE.
4. Unplug the DPF outlet temperature sensor on the DPF Unit

Does the P3756 fault occur?

- Yes – Plug in DPF outlet temperature sensor. Proceed to step 6E.
- No – Record which faults occurred or check that the DPF outlet temperature sensor value is -40°F. Plug in DPF outlet temperature sensor – Proceed to step 6E.

Step 6E: Inspect SCR inlet temperature sensor

Troubleshooting steps

1. Turn the key switch ON. Clear the faults.
2. Observe the EAS faults or Values in DAVIE.
3. Unplug the SCR inlet temperature sensor on the SCR unit

Does the P3796 fault occur?

- Yes – Plug in SCR inlet temperature sensor. Proceed to step 6F.
- No – Record which faults occurred or check that the SCR inlet temperature sensor value is -40°F. Plug in SCR inlet temperature sensor – Proceed to step 6F.

Step 6F: Fix reversed temperature sensors

Troubleshooting steps

1. Review the results of the temperature sensor tests in steps 6B, 6C, 6D and 6E.

Do all of the EAS temperature sensors have the correct fault or correct value when unplugged?

- Yes – Proceed to step 7A.
- No – Contact the Engine Support Center for further instructions.

Step by step 7: Clear the fault code

Step 7A: Run a regeneration

Troubleshooting steps

1. Run a regeneration.
2. Use DAVIE to record the regeneration data during the regeneration.
3. Use DAVIE to verify whether the fault codes are inactive.

Did the fault codes go away?

- Yes – Repair complete.
- No – Proceed to step 7B

Step 7B: Disable the fault code

Troubleshooting steps

1. Connect all components.
2. Operate the system within the 'reset condition of the fault code' found in the

fault code information.

3. Use DAVIE to verify whether the fault codes are inactive.

Is the fault code P3770 inactive?

- Yes – Proceed to step 7C.
- No – Return to the troubleshooting steps. Proceed to step 1A.

  If all the steps have been completed and checked again, contact the Engine Support Center for further instructions.

Step 7C: Clear the inactive fault codes

Troubleshooting steps

1. Connect all components
2. Turn the key switch ON.
3. Use DAVIE to clear the inactive fault codes.

Have all the fault codes been cleared?

- Yes – Repair complete.
- No – Troubleshoot any remaining active fault codes.

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