P3973

Fault code description

NOx sensor after catalyst - Persist, not valid

Possible cause

1. Exhaust system leaks.
2. A NOx after catalyst sensor that has carbon build-up on the tip of the sensor.
3. An incorrectly installed NOx after catalyst sensor.
4. Excessive engine oil consumption.
5. NOx after catalyst sensor internal failure.
6. Deposits in the decomposition pipe.

Additional information

This fault may result in engine torque reduction or vehicle speed limiting.

Set condition of fault code

The set condition depends on the "release sequence number"

Release sequence number <9:

This diagnostic runs when the key switch is in the ON position, the engine is running and the exhaust gas temperature after the SCR catalyst is above 302ºF (150ºC) for five seconds.

The EAS-3 ECU detects that the NOx reading is changing more slowly than expected with the engine conditions.

Release sequence number ≥9:

This diagnostic runs when the key switch is in the ON position, the engine is running and the exhaust gas temperature after the SCR catalyst is above 392ºF (200ºC) for 60 seconds.

The EAS-3 ECU detects that the NOx reading is changing more slowly than expected with the

engine conditions.

Reset condition of fault code

This fault code will change to inactive immediately after the diagnostic runs and passes.

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P3973, Diagnostic information

Technical data

"Sensor, NOx after catalyst (F843)"

Location of component(s)

"Location information, EAS-3"

Electrical diagram(s)

Refer to the OEM service manual for more information.

Description of component(s)

"Sensor, NOx after catalyst (F843)"

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 could 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 line heating fault codes.

Is fault code P3973 active?

- Yes – Proceed to step 1B
- No – Proceed to step 5A

Step 1B: Check for fault codes

Troubleshooting steps

1. Turn the key switch ON.
2. Use DAVIE to check for fault codes related to the NOx after catalyst sensor.

Are fault codes related to the NOx after catalyst sensor active?

- Yes – Proceed with the appropriate fault code
- No – Proceed to step 1C

Step 1C: Check for fault codes

Troubleshooting steps

1. Turn the key switch ON.
2. Use DAVIE to check for fault codes related to the NOx before catalyst sensor.

Are fault codes related to the NOx before

catalyst sensor active?

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

Step by step 2: Check the DEF decomposition pipe

Step 2A: Check for deposits in the decomposition pipe

Troubleshooting steps

1. Turn the key switch OFF.
2. Engine off.
3. Remove the decomposition pipe from the vehicle.
4. Inspect for excessive DEF deposits and crystallisation.

Are excessive deposits/crystallisation found inside the decomposition pipe?

- Yes – Clean and re-install the decomposition pipe - Proceed to step 5A
- No – Proceed to step 3A

Step by step 3: Check the exhaust system

Step 3A: Inspect the exhaust system for leaks

Troubleshooting steps

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

Are exhaust system leaks found?

- Yes – Repair or replace the leaking components. Proceed to step 5A
- No – Proceed to step 4A

Step by step 4: Check the condition of the NOx sensors

Step 4A: Inspect the condition of the NOx sensors

Troubleshooting steps

1. Turn the key switch ON.
2. Start the engine.
3. Perform the 'DPF regeneration test'. For more information, go to 'Explanatory notes to DAVIE'.
4. Use DAVIE to check for fault codes

Is fault code P3973 active?

- Yes – Proceed to step 4B
- No – Proceed to step 5A

Step 4B: Check for fault codes

Troubleshooting steps

1. Turn the key switch ON.
2. Check for active fault codes related to the NOx before catalyst sensor.

Are fault codes related to the NOx before catalyst sensor active?

- Yes – Proceed with the appropriate fault code - Proceed to step 5A
- No – Replace the NOx after catalyst sensor - Proceed to step 5A

Step by step 5: Clear the fault code

Step 5A: 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 if the fault codes are inactive.

Is fault code P3973 inactive?

- Yes – Proceed to step 5B
- 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 5B: 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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