P3921

Fault code description

DEF dosing valve - Data erratic, intermittent or incorrect

Possible cause

1. A mechanical failure of the DEF dosing valve.
2. Pin to pin short circuit of the DEF dosing valve.
3. DEF contamination.

Additional information

DEF injection into the SCR system is disabled.

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

Set condition of fault code

This diagnostic runs continuously when the key switch is in the ON position and dosing is being commanded.

The EAS-3 ECU detects a mechanical failure of the DEF dosing valve.

Reset condition of fault code

To validate the repair, start the engine and let it idle for one minute.

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

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P3921, Diagnostic information

Technical data

"Valve dosing (L075)"

Location of component(s)

"Location information, EAS-3"

Electrical diagram(s)

Refer to the OEM service manual for more information.

Description of component(s)

"Valve dosing (L075)"

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

any 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 fault code P3921 active?

- Yes – Proceed to step 2A
- No – Proceed to step 4A

Step by step 2: Check the DEF dosing valve and the circuit

Step 2A: Check for a pin-to-pin short circuit in the harness

Troubleshooting steps

1. Turn the key switch OFF.
2. Disconnect the EAS-3 actuator from the harness.
3. Disconnect the DEF dosing valve from the harness.
4. Check for a pin-to-pin short circuit.
5. Measure the resistance between the EAS-3 unit connector DEF dosing valve signal pin and the return pin in the harness.

Is the resistance greater than 100k ohms?

- Yes – Proceed to step 2B
- No – A pin-to-pin short circuit has been detected in the harness. Repair or replace the harness - Proceed to step 5A

Step 2B: Check the resistance of the DEF dosing valve

Troubleshooting steps

1. Turn the key switch OFF.
2. Disconnect the DEF dosing valve from the harness.
3. Check the DEF dosing valve resistance.
4. Measure the resistance between the DEF dosing valve signal and the earth pin.

Is the resistance 11 to 18 ohms?

- Yes – Proceed to step 3A
- No – An internal short or open circuit has been detected. Replace the DEF dosing valve. Proceed to step 5A

Step by step 3: Check the DEF pump module filter

Step 3A: Check for a contaminated DEF pump module filter

Troubleshooting steps

1. Turn the key switch OFF.
2. Check the DEF pump module filter for signs of blockage or buildup.

DEF pump module filter free from contamination?

- Yes – Proceed to step 4A
- No – The fluid in the tank is not pure DEF. Drain the tank, clean the system and fill the tank with DEF - Proceed to step 4A

Step by step 4: Check the DEF dosing valve

Step 4A: Check for a stuck closed DEF dosing valve

Troubleshooting steps

1. Turn the key switch OFF.
2. Remove the DEF dosing valve.
3. Place the DEF dosing valve in a

measuring container and cover.

4. Check for a stuck, closed or low flowing DEF dosing valve.
5. Perform the fuel DEF pump module override test. For more information, go to 'Explanatory notes to DAVIE'.

Does the DEF dosing valve meet the specifications?

- Yes – Proceed to step 5A
- No – Damaged DEF dosing valve. Replace the DEF dosing valve - Proceed to step 5A

Step by step 5: Check the DEF quality

Step 5A: Check the DEF quality

Troubleshooting steps

1. Turn the key switch OFF.
2. Check the DEF quality:
   - Visually check the DEF in the tank for signs of debris or contamination.
   - Use a DEF refractometer to measure the urea concentration.
   - Use the oil test paper to test for diesel fuel or oil contamination in the DEF tank.

Is the DEF free of contamination and within the specifications?

- Yes – Proceed to step 6A
- No – The fluid in the tank is not pure DEF. Drain the tank, clean the system and fill the tank with DEF. Proceed to step 6A

Step by step 6: Clear the fault code

Step 6A: 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 P3921 inactive?

- Yes – Proceed to step 6B
- 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 6B: 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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