P3874

Fault code description

Tank heater valve - Stuck in open position

Possible cause

1. Tank heater valve stuck open.
2. Malfunctioning tank heater valve.
3. Failed EAS-3 actuator continuously commanding heater on.
4. Routing of the coolant hose to the tank heater valve is incorrect.

Additional information

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

Set condition of fault code

This diagnostic runs continuously when the key switch is in the ON position.

The tank heater valve is determined to be in the ON position and a DEF tank temperature of more than 167ºF (75ºC) is measured while the EAS-3 actuator is commanding the tank heater valve to be in the OFF position.

Reset condition of fault code

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

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

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P3874, Diagnostic information

Technical data

"Valve, tank heater (L076)"

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, tank heater (L076)"

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 fault codes.

Is fault code P3853, P3854, P3855, P3856, P3871, P3873 or P3904 active?

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

Step by step 2: Check the DEF tank heater system

Step 2A: Check the DEF tank heater coolant lines

Troubleshooting steps

1. Turn the key switch OFF.
2. Inspect the tank heater coolant lines and connectors for:
   - Leaking or damaged coolant lines
   - Kinked, restricted or blocked coolant lines
   - Loose connections
   - Leaking seals and gaskets

Refer to the OEM service manual for details on coolant line routing and flow.

Are leaks or damage found in the tank heater system?

- Yes – Repair or replace the leaking or damaged coolant lines, fittings or seals. Verify that the engine coolant level is within normal operating range before returning to service. Proceed to step 4A
- No – Proceed to step 2B

Step 2B: Check the engine coolant level

Troubleshooting steps

1. Turn the key switch OFF.
2. Check the engine coolant level. Make sure that the coolant level is within normal operating levels.

Is the engine coolant level correct?

- Yes – Proceed to step 3A
- No – Add coolant to the engine as necessary. Proceed to step 4A

Step by step 3: Check the DEF tank heater system operation.

Step 3A: Verify that the DEF tank heater valve is installed correctly.

Troubleshooting steps

1. Turn the key switch OFF.
2. Inspect the installation of the tank heater valve.
3. Make sure that the tank heater valve is installed correctly and not reversed.

Refer to the OEM service manual for details on the tank heater valve.

Is the tank heater valve installed correctly?

- Yes – Proceed to step 3B
- No – Remove the tank heater control valve and re-install it in the correct position. Make sure the valve is not reversed according to the coolant flow direction. Refer to the OEM service manual. Proceed to step 4A

Step 3B: Verify proper operation of the tank heater valve.

Troubleshooting steps

1. Turn the key switch OFF.
2. Activate the DEF tank heater valve with DAVIE.
3. Make sure the tank heater valve is operating correctly, not stuck closed or slow to respond, and able to fully open.

Is the tank heater control valve operating correctly?

- Yes – Proceed to step 4A
- No – Repair or replace the tank heater valve. Proceed to step 4A

Step by step 4: Clear the fault code

Step 4A: 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 P3874 inactive?

- Yes – Proceed to step 4B
- 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 4B: 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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