P1352

Fault code description

P1352, VTG turbo charger actuator learning - Malfunction

Possible cause

1. Turbo (VTG) is stuck
2. Internal error (software)

Additional information

The position and effort to move the VTG turbo charger nozzle ring are monitored by the actuator.

After the ignition is switched on, a learn sweep is performed by the actuator. During this sweep the VTG turbo charger nozzle ring is fully opened and fully closed to check the end positions.

The actuator can only control the nozzle ring in a limited span with this fault active.

Set condition of fault code

The VTG turbo charger actuator (L037) cannot reach the end-stops during the learn sweep after the ignition is switched on.

Reset condition of fault code

This fault code will change to inactive after the ignition is switched off and on again and the diagnostic runs and passes.

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P1352, Diagnostic information

Technical data

"Actuator, rotary speed (L037)"

Location of component(s)

"Location information, PMCI-2"

Electrical diagram(s)

"PMCI-2"

Description of component(s)

"Actuator, rotary speed (L037)"

Block diagram

"PMCI-2"

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.

- This troubleshooting tree is based on the assumption that the supply power and earth to the PMCI are functioning properly.
- Disconnecting the PMCI 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 in Rapido.
- Exit the 'active errors' screen 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 codes. Refer to the 'possible causes' section in Rapido.

Step 1

Perform the turbocharger actuator effort test in DAVIE. Use the Engine Support Center to assist with interpreting this test.

Does the actuator travel meet the required specifications?

- Yes – Proceed to step 2.
- No – Proceed to step 3.

Step 2

Perform the verification procedure.

Do the fault codes re-occur?

- Yes – Proceed to step 3.
- No – Complete repair.

Step 3

Use the sector span tool to check the range of travel for the turbo sector gear. Follow the job instructions 'Replace VTG turbocharger actuator' in Engine Rapido.

Is the turbo sector gear able to reach both span zones (regardless of the effort needed to move it)?

- Yes – Proceed to step 4.
- No – Turbo will need to be replaced.

Step 4

Check turbo sector gear teeth. Have damaged turbo sector gear teeth been found?

- Yes – Contact the Engine Support Center for further instruction on replacement of the turbo (VTG).
- No – Proceed to step 5.

Step 5

Check the actuator output gear for damage. Is the actuator output gear damaged?

- Yes – Contact the Engine Support Center for further instruction on replacement of the actuator.
- No – Proceed to step 6.

Step 6

Check the actuator output gear for adequate rotation (minimum of one complete rotation). Is the actuator output rotation adequate?

- Yes – Proceed to step 7.
- No – Contact the Engine Support Center for further instruction on replacement of the actuator.

Step 7

Perform the turbo (VGT) actuator replacement test with DAVIE. Has the fault status changed to inactive?

- Yes – Proceed to verification procedure.
- No – Proceed to step 8.

Step 8

Contact the Engine Support Center for further instruction.

Verification procedure

With DAVIE connected and key ON, clear the errors. Start the engine and let it idle to verify with DAVIE that the errors do not re-occur.

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