



Turbo-Compound Engines - DTC P024400 - Turbocharger Wastegate Actuator Range/Performance - US21+OBD20 To US21+OBD22 Emissions



Internal Content

The P024400 DTC is a diagnostic monitor performed typically at startup and idle. The diagnostic is both an anti-tampering check and a means to determine that the wastegate is not stuck open or closed. It operates after startup and at idle by commanding full air pressure to the AVU, and when the wastegate opens, the monitor is checking that there is a change in turbo speed indicating actuation / operation of the wastegate.

The problem occurs in vehicles that may have bled off chassis air pressure and the diagnostic can run before enough air pressure is built up to overcome the PPV and supply air to the AVU, since the monitor does not include air pressure as an enable condition. When this occurs, the fault will light the MIL.

UPDATE 10/22: New EMS software has been released. Ensure the software has been updated to the most recent version.

For applicable Turbo-Compound Engines, during instances of low chassis air pressure the P024400 fault may occur due to a logic error.

For vehicles experiencing this fault, perform the following:

1. As of October 2022, a software update for the Engine Control Module (EMS) has been released that addresses this issue. Ensure EMS software is current.

If EMS software is current:

2. Ensure that the vehicle is in a location with ambient air temperature between 18°F and 131°F (18°C and 55°C).

3. Start the vehicle. Allow air pressure to build fully - either by listening for the air compressor to shut off (along with the audible hiss from the compressor) or simply idling the truck for 10 minutes.



4. Allow the engine to run until coolant temperature reaches 176°F (80°C).
5. Once the above conditions are met, switch the engine to the off position, wait 30 seconds and restart.
6. Allow engine to idle with the parking brake released for one minute. At this point the monitor should then pass and heal the DTC.
7. Refresh Tech Tool and ensure the fault has not returned.

If the fault recurs after the above steps are performed:

Start an eService case. The case should include:

- A detailed description of the issue.
- This CBR solution number.
- Any vehicle/repair history relevant to this case.

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