



Schaeffler Vitesco Service Info



NOx Sensors

Instructions for handling and commissioning

A NOx sensor is a system component within the engine management system for detecting and measuring the concentration of nitrogen oxides (NOx) in exhaust gases. These nitrogen oxides, in particular nitrogen monoxide (NO) and nitrogen dioxide (NO₂) are harmful components of vehicle emissions.

NOx sensors are used in both passenger cars and commercial vehicles with gasoline and diesel engines to monitor and control exhaust emissions efficiently. They are crucial for the function of exhaust aftertreatment systems such as the selective catalytic reduction system (SCR). This system uses ammonia or urea to convert NOx into harmless nitrogen gas and water.

A NOx sensor (Figure 1) consists of the sensor module, the connecting cable, and the control unit. These components are perfectly matched and calibrated at the factory. Therefore, no individual parts of the system may be replaced or repaired separately, as this will lead to malfunctions during operation.

Replacing a NOx sensor should not be considered a “plug-and-play” solution. Rather, the work involved is similar to replacing other system-relevant control units. A suitable vehicle diagnostic system that enables software-side configuration and integration into the vehicle system is required. Due to the demanding technical requirements, replacement and adaptation should only be carried out by trained specialist personnel.

Important:

If NOx sensors are stored for an extended period, the sensor material may absorb moisture. In individual cases, this can lead to entries being stored in the error memory for newly installed sensors. This error is harmless, as the moisture evaporates after the operating temperature is reached and the sensor then functions properly.



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Figure 1: NOx sensor

Before installing the new NOx sensor:

- Check the functionality of the vehicle-side plug connection and electrical connections.
- Remove excess condensate from the exhaust system.
- Clean the screw-in thread on the vehicle, check the thread and rework if necessary.
- Do not remove the protective cap from the sensor until it is ready to be screwed in.
- Do not bend the connecting cable, avoid tensile load.
- Do not grease the thread of the sensor
- Do not use sprays (e.g. silicone, rust remover, or lubricant) around the sensor or on the sensor.

After installing the new NOx sensor:

- Tighten the sensor to the torque specified by the vehicle manufacturer.
- Clip the connecting cable into the mounting points on the vehicle and connect the plug to the vehicle.
- Connect the battery maintenance device to the charging contacts of the vehicle.
- Adapt the sensor to the engine management system using a suitable vehicle diagnostic system (SCN encoding).
- Call up the fault memory, clear if necessary and reset the remaining distance.

Please observe the vehicle manufacturer specifications!

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