

General short test procedure for inspection of gaseous and particulate pollutants of combustion engines

This universal and rapid measurement method is used to check the exhaust gas behaviour of internal combustion engines in the context of the periodic inspection as well as to detect high-emission internal combustion engines for mobile or stationary applications in real operation.

The measurement method is also characterized by the fact that it can be used for all common fuels such as gasoline, diesel, natural gas, methane (CNG and LNG), liquefied petroleum gas (LPG) and comparable biofuels as well as synthetic fuels.

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DEVELOPMENT STATUS:

Proved concept

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Exhaust emission
Smoke check
Short test procedure

IPR:

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TECHNOLOGY

- The most important air-quality related exhaust constituents NO_x and ultrafine PN are not measured during nowadays periodic emission inspection of in-use road vehicles.
- The free acceleration test for Diesel is used only very limited in reality - Specifically with heavy duty vehicles.
- We have more than 100 million Diesel vehicles in Europe.
- How will we handle the deterioration problem of catalyser and filters.
- A significant share of Euro 6 vehicles still have highly exceeding NO_x emissions.
- Chip tuning and hardware emulators from third parties are impair the emission performance.

BENEFITS

- The entire exhaust gas measurement can be carried out in less than five minutes in the vehicle stand or on a roller tester.
- For the first time a recurrent inspection of the important exhaust components nitrogen oxides and fine particles is possible.
- Due to the air-fuel ratio determination used, the actual engine setting for diesel engines can be checked for the first time.
- It is gentle on the combustion engine and on the environment, since no free engine acceleration is required up to the maximum speed for diesel engines.
- The measuring method is independent of the measuring object, which means that software manipulations have no influence on the measuring result.

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