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**INDUSTRY STANDARD OF THE
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JJF 1873-2020

**Calibration Specification for Diesel Vehicle Nitrogen Oxides
(NO_x) Measuring Instruments
(English Translation)**

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Appendix D Examples of Uncertainty Evaluation of Measurement Instrument for NO, NO₂, CO₂ Indication Errors (10)

Introduction

This specification is based on JJF 1071-2010 "Rules for the Compilation of National Metrology and Calibration Specifications", JJF 1001-2011 "General Metrology terms and definitions", JJF 1059.1-2012 "Measuring Uncertainty Evaluation and Expression" are the basic series of specifications Make it:

According to GB 3847-2018 "Diesel vehicle pollutant emission limits and measurement methods (free acceleration method and loading deceleration) Law)", put forward relevant requirements for the detection of nitrogen oxides in diesel vehicle emissions: This specification mainly refers to GB 3847-2018 "Limits and Measurement Methods of Pollutant Emissions from Diesel Vehicles (Free Acceleration Method and Loading Deceleration Method)", GB 18285-2018 "Limits and Measurement Methods of Pollutant Emissions from Gasoline Vehicles (Dual Idle Speed Method and Simple Working Condition Method)", JJG688-2017 "Automobile Emission Gas Tester" was compiled:

This specification is released for the first time:

Diesel vehicle nitrogen oxide (NO_x) detector Calibration specification

1 Scope

This specification applies to the calibration of nitrogen oxide (NO_x) detectors for diesel vehicles:

2 Reference documents this specification refers to the following documents:

JJF 1071-2010 National Metrology and Calibration Specifications Compilation Rules GB 3847-2018 Diesel vehicle pollutant emission limits and measurement methods (free acceleration method and loading deceleration method) GB 18285-2018 Gasoline vehicle pollutant emission limits and measurement methods (dual idle speed method and simple working condition method) for dated reference documents, only the dated version applies to this specification; for undated references the latest version (including all amendments) is applicable to this specification:

3 Terms and units of measurement the following terms and definitions defined in GB 3847-2018 apply to this specification:

3.1 Terms and definitions

3.1.1 NitrogenoxideNO_x Nitrogen oxides emitted from exhaust pipes include nitric oxide (NO) and nitrogen dioxide (NO₂):

3.1.2 NO₂-NO conversion rate convertrateofNO₂-NO when NO₂ gas passes through the NO₂-NO converter, the mole fraction of NO after the reaction is the same as that before the reaction the ratio of the total mole fraction of NO₂, expressed as a percentage (%):

3.2 Unit of measurement the nitrogen oxide (NO_x) detector for diesel vehicles adopts legal measurement units, of which:

The mole fraction of CO₂ is expressed as "%" or "10⁻²";

The mole fraction of NO and NO₂ is represented by "10⁻⁶":

4 overview

The detector (hereinafter referred to as the detector) is used to measure the concentration of nitrogen oxides (NO_x) in the exhaust pollutants of diesel vehicles:

It is a detection instrument with CO₂ concentration monitoring function: According to the measurement method, it is divided into direct measurement of NO and NO₂ detection it uses a NO₂-NO converter to convert NO₂ into NO and then measure it: According to the measurement principle it is a detector that uses chemiluminescence for measurement, a detector that uses ultraviolet sensors for measurement, and a detector that uses infrared sensors:

Detector for measuring:

The detector should have the display function of NO_x concentration: Mainly consists of sampling system, pretreatment device, analysis unit, Display device and main control system, etc: