

ICS 13.040.50

CCS Z 64



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 14762-2008

Replacing GB 14762-2002

**Limits and measurement methods for exhaust pollutants from
gasoline engines of heavy-duty vehicles (China III, IV)**

重型车用汽油发动机与汽车排气污染物排放限值及测量方法(中国III、IV阶段)

Issued on: March 31, 2008

Implemented on: July 1, 2008

Issued by: State Environmental Protection Administration

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Foreword

To implement the "People's Republic of China Environmental Protection Law" and "People's Republic of China Air Pollution Prevention Law," to protect the environment, prevent Pollution, the development of this standard. This standard specifies the first III, IV stage heavy-duty vehicles with gasoline engines with emission limits and measurement methods for automobile exhaust emissions, in order to Technical requirements and test methods for second stage III-board diagnostic (OBD) systems. This standard specifies the heavy-duty vehicle gasoline engines and vehicle exhaust emission stage III and stage IV type approval requirements, Vehicle production consistency and compliance checks and determination method in the car. This standard is GB 14762-2002 amendment, compared with GB 14762-2002 main changes are as follows:

- Improve the exhaust pollutant emission control requirements;
- Adjust the standard system will be installed for natural gas or liquefied petroleum gas as a fuel for spark ignition engines and spark ignition cars Engine emission limits and measurement methods of gaseous pollutants into other relevant emission standards;
- Change the measurement methods, test conditions by the heavy gasoline engine transient cycle constituted;
- From the beginning stage III, increased requirements for on-board diagnostic (OBD) system;
- From the beginning stage III, increasing the durability requirements of emission control devices;
- From paragraph IV start, increasing compliance requirements in car/engine;
- Adds new engine type approval procedures and a new car;
- Improve production consistency check and determination methods. The Standard

Appendix A, Appendix B, Appendix C, Appendix D, Appendix E, Appendix F, Annex G and Annex H normative appendix, Appendix I is an informative annex. "Compression ignition and gas fueled positive ignition engines of automobile exhaust emission limits and measurement methods" (GB 17961- 2005) has been replaced by "vehicles fitted with spark ignition engines and vehicles equipped ignition engine exhaust emission limits and measurement methods" (GB 14762-2002) mounted ignition engines and compression ignition automobile part and gas; Instead of the standard "vehicles fitted with spark ignition engines and Ignition engine exhaust emission limits and measurement methods "(GB 14762-2002) of gasoline and gasoline vehicle. From the date of implementation of this standard, "vehicle fitted with spark ignition engines and vehicles equipped ignition engine exhaust emission limits and measurement The method "(GB 14762-2002) abolished. According to relevant laws and regulations, the standard shall be enforceable. The standard developed by the Ministry of Environmental Protection Science, Technology organization. This standard was drafted. China Automotive Technology and Research Center. This standard is approved by the Ministry of Environmental Protection, 2008 March 17. This standard since July 1, 2009 implementation. The standard explanation by the Ministry of Environmental Protection. GB 14762 2008 Heavy vehicle gasoline engine and automobile exhaust pollutants Emission limits and measurement methods (China III, IV stage)

1 Scope

GB 14762 is the type-approval standard for petrol engines in heavy-duty vehicles at the China III and IV stages - the buses and trucks that run on spark ignition, including the LPG and natural gas conversions common in Chinese city fleets. It covers the application for type approval, the approval itself, the engine marking, the technical requirements and tests, the installation on the vehicle, the definition of an engine family and its parent engine, conformity of production and the implementation timetable, with nine annexes carrying the test procedures, the reference fuels and the on-board diagnostic requirements. Issued on 31 March 2008 by the State Environmental Protection Administration, in force since 1 July 2008, replacing GB 14762-2002. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the edition it replaces are taken from there. The clause text, the tables and the numeric limits are not reproduced on this page - they are in the document itself, which is delivered in full in English translation.

This standard specifies the heavy-duty vehicle gasoline engines exhaust emission limits and measurement methods, on-board diagnostic (OBD) system The technical requirements and test methods. This standard applies to the design speed greater than 25 km/h for M2, M3, N2 and N3 class and total mass greater than 3 500 kg of category M1 motor Type of vehicle fitted with a petrol engine and vehicle approval, production consistency check and compliance check in car/engine. If equipped with gasoline engines category M2 vehicle type approval has been carried out according to the provisions of GB 18352.3-2005, the

vehicle engine may be type approved in accordance with this standard.

2 Normative references

The standard content of the following documents cited in the articles. For undated references, the effective version applies to this standard.

GB/T 15089-2001 Classification of motor vehicles and trailers

GB/T 17692-1999 automotive net engine power test method

GB 17930 cars using unleaded petrol

GB 18285-2005 ignition engine exhaust emission limits and measurement methods (two-speed idle conditions and simple method)

GB 18352.3-2005 light vehicle emission limits and measurement methods (China III, IV stage) System Requirements and test methods for durability

GB 20890-2007 heavy vehicle exhaust emission control

ISO 16183 heavy duty engines used in the original part of the exhaust gas flow dilution under transient test conditions and measurement methods of gaseous pollutants Methods of measurement systems measure particulate emissions Engine family

ISO 16185 for heavy road vehicles automobile exhaust emissions certification

3 Terms and Definitions

The following terms and definitions apply to this standard.

3.1 gaseous pollutants Carbon monoxide (CO), hydrocarbons (HC) (hydrocarbons than gasoline assumed to C₁H_{1.85}) and nitrogen oxides (NO_x, NO₂ when using the Scale Shown).

3.2 test cycle Engine in transient conditions the test in accordance with the rotational speed and torque testing procedures.

3.3 engine (or engine family) type-approval Exhaust emissions on the level of approval of an engine (or engine family) type.

3.4 Gasoline Gasoline-fueled spark ignition engines.

3.5 Engine Model (model) The basic characteristics of the engine listed in Appendix A of the same type of engine no difference.

3.6 engine family Manufacturing Enterprises by the provisions of Appendix AB designed a set of engines, these engines have similar exhaust emission characteristics; the same family All engines shall meet the appropriate emission limits. GB 14762 2008

3.7 source machine Selected from the engine family, the engine family to represent the emission characteristics of the engine.

3.8 The net power In the test bench, the power measurement method according to GB/T 17692-1999 provisions, in the end of the engine crankshaft or equivalent member The measured power.

3.9 Maximum net power (P_{max}) manufacturing enterprises in the application for type-approval declared maximum net power.

3.10 percent load The percentage of the engine at a speed up to the maximum torque.

3.11 Heavy Gasoline Engine Transient Cycle Performed in this standard

7.2 contains one 830-by-second conversion conditions of the test cycle. The test cycle is launched using Annex BB Machine normalized speed and torque time time data conversion in accordance with the method prescribed in Annex BA from the actual test engine rotational speed And torque between the time series.

3.12 engine operating speed range The standard set forth in Appendix B, the most common practice when the engine speed range of the engine, which is below the maximum net power speed And between the idle speed.

3.13 maximum net power speed (n_{Pmax}) maximum net power engine speed issue when.

3.14 Failure means An apparatus, by measuring it, in response to induction or car operating parameters (such as vehicle speed, engine speed, transmission gear, temperature, Intake pressure or other parameters) to activate, adjust, delay or stop work or a part of the function of the emission control system so that steam Car under normal conditions of use, the effectiveness of the emission control system is reduced, and the apparatus of the above functions without the use of type approval. When no other measures do not reduce the efficiency of the emission control system may be, the following devices are not as disabling means.

--- In order to avoid interruption of work due to engine damage or failure, the engine used temporary protection;

--- Only at engine start-up or during warm-functioning devices.

3.15 auxiliary control unit (AECS) A system installed on the engine or car, function or control strategy to protect the engine and its ancillary equipment, in order to avoid Free engine damage and failure, or in favor of starting the engine. An auxiliary control device may also be a countermeasure or measures, It should prove that it is not a failure of the device.

3.16 irrational emission control strategy Some countermeasures or measures to enable the vehicle under normal operating conditions reduce the effectiveness of emission control