

Translated English of Chinese Standard: HJ438-2008

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National Environmental Protection Standard of the People's Republic of China

HJ 438-2008

Durability of Emission Control Systems of Compression Ignition and Gas Fuelled Positive Ignition Engines of Vehicles

(Durability Technical Requirements of Emission Control Systems of Compression
Ignition and Gas Fuelled Positive Ignition Engines and Vehicles)

车用压燃式、气体燃料点燃式发动机与汽车排放 控制系统耐久性技术要求

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Announcement of the Ministry of Environmental Protection of the People's Republic of China

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With a view to implementing the “Environmental Protection Law of the People's Republic of China” and “Law on Prevention of Air Pollution of the People's Republic of China”, preventing the environmental pollution caused by pollutant emissions of vehicles, protecting the environment and safeguarding the human health, The Ministry of Environmental Protection hereby approves to issue 3 standards, including “Technical Specification for On-board Diagnostic (OBD) System of Compression Ignition and Gas Fuelled Positive Ignition Engines of Vehicles”.

The name and number of such standards are as follows:

I. Technical Specification for On-board Diagnostic (OBD) System of Compression Ignition and Gas Fuelled Positive Ignition Engines of Vehicles HJ 437–2008;

II. Durability of Emission Control Systems of Compression Ignition and Gas Fuelled Positive Ignition Engines of Vehicles HJ 438–2008;

III. In-service Conformity of Compression Ignition and Gas Fuelled Positive Ignition Engines of Vehicles HJ 439–2008.

The above standards shall be implemented as from July 1, 2008 and published by China Environmental Science Press. The contents of such standards are available on the official website of the Ministry of Environmental Protection (bz.mep.gov.cn).

Hereby announced!

June 24, 2008

Foreword

This standard was formulated with a view to implementing the “Environmental Protection Law of the People’s Republic of China” and the “Law on Prevention of Air Pollution of the People’s Republic of China”, preventing the environmental pollution caused by pollutant emissions of vehicles, and improving the environmental quality.

This standard specifies the durability requirements (including measurement methods) of emission control systems of compression ignition and gas fuelled positive ignition engines of vehicles. It supplements the contents about durability of emission control system in “Limits and Measurement Methods for Exhaust Pollutants from Compression Ignition and Gas Fuelled Positive Ignition Engines of Vehicles (III, IV, V)” GB 17691.

This standard is modified in relation to the requirements for the durability of heavy-duty vehicles specified in Directive 2005/55/EC of European Union (EU) “Relating to the measures to be taken against the emission of gaseous and particulate pollutants from compression-ignition engines for use in vehicles, and the emission of gaseous pollutants from positive-ignition engines fuelled with natural gas or liquefied petroleum gas for use in vehicles” as well as the requirements for the durability test procedures of emission control system specified in Directive 2005/78/EC.

This standard is issued for the first time.

Appendix A of this standard is normative.

This national standard is formulated by the Technology and Standards of the Ministry of Environmental Protection.

Drafting organizations of this standard: Jinan Vehicle Test Center, Chinese Research Academy of Environmental Science and China Automotive Technology & Research Center

This standard was approved by the Ministry of Environmental Protection of the People’s Republic of China on June 24, 2008.

This standard shall be implemented from July 1, 2008.

Ministry of Environmental Protection is responsible for the explanation of this standard.

Durability of Emission Control Systems of Compression Ignition and Gas Fuelled Positive Ignition Engines of Vehicles

1 Application Scope

This standard specifies the durability requirements (including measurement methods) for vehicle adopted with compression ignition engine and that adopted with the spark ignition engine fuelled with natural gas (NG) or liquefied petroleum gas (LPG) as well as emission control system of such engines.

This standard is applicable to the type approval of the emission control system of compression ignition (including gas fuelled positive ignition) engines equipped in M_2 , M_3 , N_1 , N_2 and N_3 vehicles with design speed greater than 25km/h as well as M_1 vehicles with total mass greater than 3500kg.

Where N_1 and M_2 vehicles adopted with compression ignition (including gas fuelled positive ignition) engines meet the durability requirements of “Limits and Measurement Methods for Emissions from Light-duty Vehicles” GB 18352.3–2005, this standard may not be implemented.

2 Normative References

The following normative documents contain provisions which, through reference in this text, constitute provisions of this standard. For undated references, the effective edition of the normative document applies.

GB 17691 “Limits and Measurement Methods for Exhaust Pollutants from Compression Ignition and Gas Fuelled Positive Ignition Engines of Vehicles (III IV V)”

GB 18352.3–2005 “Limits and Measurement Methods for Emissions from Light—Duty Vehicles”

GB/T 15089–2001 “Classification of Power-driven Vehicles and Trailers”

HJ 437–2008 “Technical Specification for On-board Diagnostic (OBD) System of Compression Ignition and Gas Fuelled Positive Ignition Engines of Vehicles”

3 Terms and Definitions

For the purpose of this standard, terms and definitions specified in GB 17691 and “Technical Specification for On-board Diagnostic (OBD) System of Compression Ignition and Gas Fuelled Positive

- a) Any exhaust after-treatment system;
- b) Electronic control unit of the engine and relevant sensor and actuator;
- c) Gas recirculation system, including relevant filter, cooler, control valve and pipeline;
- d) Crankcase ventilation device.

A.6.2.6 All of the critical planned maintenance related to emission shall be provided with reasonable possibility in practical situations. The automobiles or engine manufacturing enterprise shall prove the reasonable possibility to the type approval agency before the durability test maintenance.

A.6.2.7 The critical planned maintenance item related to emission which is in accordance with any condition required in Articles 6.2.7.1~6.2.7.4 shall be considered as reasonably possible in practical situations.

A.6.2.7.1 The manufacturing enterprise shall submit data used for determine relations between emission and vehicle performance, such as: increased emission caused by lack of maintenance, and the automobile performance will deteriorate to unacceptable degree under typical running condition.

A.6.2.7.2 The manufacturing enterprise shall submit investigation statistical data (confidence level 80%) about 80% engines has been taken critical maintenance in recommended time interval during actual use.

A.6.2.7.3 The clear indicator light shall be installed on the fascia board to remind the driver that the next maintenance shall activate the indicator light within suitable running mileage or through component failure; before carrying out the required maintenance and while the engine is working, the indicator light must stay in active state without erasing the signal. The signal shall be restored while maintaining, and the system shall be in function during the whole useful life of the vehicle.

A.6.2.7.4 Any other methods which are used by type approval agency to determine the reasonable implementation possibility of the critical maintenance items during the actual use.

A.6.3 Modification of the emission-relevant planned maintenance

During the durability test, vehicle or engine manufacturing enterprise shall timely report to the type approval agency for approval if the vehicle or engine manufacturing enterprise needs to develop new maintenance item; the users shall be informed of the new maintenance item. The vehicle or engine

References and Original Chinese Documents

[1] HJ 438-2008 Durability of emission control systems of compression ignition and gas fuelled positive ignition engines of vehicles.

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