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**Technical specification for on-board diagnostic system of light
duty vehicles**

轻型汽车车载诊断(OBD)系统管理技术规范
(English Translation)

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Table of Contents

Preface

1. Scope

2 Normative references

3 Terms and Definitions .1

4 OBD system technical requirements .2

5 Type approval

6 5 production consistency check

7 6 management with car

8 Universal fault diagnostic technical requirements

Maintenance services of claim 9

Appendix A (normative) with light vehicle on-board diagnostic (OBD) system inspection procedures

Foreword

To implement the "People's Republic of China Environmental Protection Law" and "People's Republic of China Air Pollution Prevention Law," prevention of motor vehicle pollutants Emissions environmental pollution, improve air quality, meet the needs of environmental management, the development of this standard.

The standard for "light vehicle emission limits and measurement methods (China III, IV stage)" (GB 18352.3-2005) concerning Board diagnostic (OBD) system, the technical requirements are supplemented by content, type approval of the OBD system, production consistency check in steam Vehicle inspection, general-fault diagnostic and other aspects of the management of technical requirements.

The technical content of this standard uses a "light vehicle emission limits and measurement methods (China III, IV stage)" (GB 18352.3-) In 2005 related content.

Appendix A of this standard is a normative appendix.

This standard is the first release.

This standard is developed by the Ministry of Environmental Protection Science, Technology organization.

This standard was drafted. China Automotive Technology and Research Center, United Automotive Electronic Systems Co., Ltd.

This standard MEP December 1, 2009 for approval.

This standard since February 1, 2010 implementation.

The standard explanation by the Ministry of Environmental Protection.

Light vehicle onboard diagnostic (OBD) systems management technology specification

1 Scope

This standard GB 18352.3-2005 relating to on-board diagnostic (OBD) system, the technical requirements are supplemented by content of the OBD system in the system type approval, production consistency checking, management proposed technical requirements in automotive testing, fault diagnostic equipment and other general-purpose use.

This standard applies to spark ignition or compression ignition engine-powered, the maximum design speed is greater than or equal to 50 km/h for light vehicles. With Ignition engines as the driving force, the maximum design speed is greater than or equal to 25 km/h for heavy-duty vehicles can be implemented by reference.

2 Normative references

This standard refers to the contents of the following documents contain provisions which, undated references, the effective version applies to this standard. all

Note dated references, subsequent amendments or revisions do not apply to this standard, however, encourage the use of the following ISO standard the latest version.

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) GB/T 15089-2001 Classification of motor vehicles and trailers GB/T 19755 light hybrid electric vehicle emissions measurement methods ISO 2575 Road vehicles - Symbols and signal control indicator ISO 9141-2:1996 Road vehicles - Diagnostic systems - Part 2. CARB requirements for interchange of digital information Requirements for emissions-related systems. ISO 14230-4 Road vehicles - Diagnostic systems - Keyword protocol 2000 - Part 4 15031-3 ISO DIS. Part 3 of the 2001 communication between road vehicles and external test equipment used for vehicle emissions-related diagnostics Score. diagnostic connector and associated circuits. technical requirements and use 15031-4 ISO DIS. Part 4 of the 2001 communication between road vehicle and the external diagnostic test equipment emissions associated with vehicle Score. external test device Part 5 communication between the vehicle and the external road vehicles diagnostic test device related emissions 2001. 15031-5 ISO DIS Score. Emissions-related diagnostic services Part 6 of the communication between the vehicle and the external road vehicles diagnostic test device related emissions 2001. 15031-6 ISO DIS Score. diagnostic trouble code definitions ISO DIS 15765-4:2001 Road vehicles - on

Controller Area Network (CAN) - Part 4 diagnosis. a relationship with the discharge System requirements SAE J1850.1998 Class B Data Communication Network Interface

3 Terms and Definitions

Related terms and definitions of the following terms and definitions established in GB 18352.3-2005 apply to this standard.

3.1 Light vehicles

Refers to the maximum total mass not exceeding 3 500 kg in GB/T 15089-2001 specified in M1, M2 and N1 category and cars.

3.2 on-board diagnostic (OBD) system Refers to the emission control board diagnostic (OBD) systems. It must be possible to identify faulty functional area, and on behalf of the fault Mode code of the information stored in the electronic control unit memory.

3.3 Malfunction indicator (MI)

Visual indicator. When connected to the OBD system components or any emission-related OBD system itself fails, it Clearly prompted motorists.

3.4 Access

It refers to the serial interface for the standard diagnostic connection, access to all emission-related OBD data. The data includes vehicle emissions Relevant parts inspection, diagnosis, maintenance or repair any fault codes when.

3.5 Repair Information

Automobile manufacturers to authorized dealers (or garage) to provide automobile diagnosis, maintenance, inspection, periodic monitoring or repair all the information you need. If necessary, this information should include maintenance manuals, technical manuals, diagnosis information (for example. for measurement theory Minimum and maximum), wiring diagrams, the software calibration applies to a vehicle identification number, and the special circumstances of the individual description of the tools and data equipment, data record information. Those data automobile manufacturers may not provide protection of intellectual property, or as a car manufacturer Enterprise and (or) expertise secret original parts suppliers, but should not hide the necessary technical information.

3.6 Ready

OBD system according to ISO DIS 15031-5 defined PID \$ 01 (B, C, D byte) format, and part of its diagnostic support the system should use a different state value to distinguish the diagnostic evaluation has been completed and the need for further diagnostic evaluation of

the operation to complete.

3.7 Freeze frame data

Means that when the OBD system confirms the failure of any component or system when the engine is frozen state data stored in the first occurrence of the fault Electronic control unit memory. If a subsequent fuel system or misfire, any freeze frame of the original store will be like fire or oil supply system State (take first occurs) replaced. Engine conditions of storage shall include, but not limited to. the calculated load value, engine speed, fuel trim Value (if any), fuel pressure (if available), vehicle speed (if available), coolant temperature, intake manifold pressure (if available), closed or open loop operation State (if any) and the risk of failure of the data codes are stored.

3.8 Universal fault diagnostic

According to the functional technical requirements specified in ISO DIS 15031-4 design scan tool, the scan tool should be able to correctly apply Various models, can not easily be damaged, and ensure that users get the right information and effective OBD system.

3.9 Deteriorated

Functionality or performance of emission-related components or systems, which could lead to reduced emissions exceed the GB 18352.3-2005 OBD limit.

3.10 Fault mileage

The vehicle OBD system malfunction indicator fault indicator solution to activate live (off) period and mileage is calculated at \$ 01 Traffic patterns (Service \$ 01) in PID \$ 21 a standard format defined by the mileage information through a universal diagnostic should be able to read the mileage information.

4 Technical requirements, OBD system

Light vehicle OBD system should first meet of the OBD system in GB 18352.3-2005 requirements, and should satisfy the following Claim.

4.1 Malfunction indicator (MI)

In all reasonable lighting conditions, fault indicator is activated when visible fault indicator symbol should be a line with ISO 2575 the symbol, which prohibit the use of red. For the discharge unrelated to engine failure, in conformity with the relevant standards, can Fault indicator is represented by the other symbols.