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QC

**AUTOMOTIVE INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

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**Oil pump of automobile engine
(English Translation)**

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1 Scope

This document specifies the terms and definitions, technical requirements, test methods, inspection rules, marking, packaging, transportation and storage of automotive diesel engines.

This document is applicable to automotive diesel engines (hereinafter referred to as the "diesel engines").

2 Normative References

The contents of the following documents constitute indispensable clauses of this document through normative references in the text. In terms of references with a specified date, only versions with a specified date are applicable to this document. In terms of references without a specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 1859.1 Reciprocating internal combustion engines - Measurement of sound power level using sound pressure - Part 1.Engineering method

GB/T 1883.1 Reciprocating internal combustion engines - Vocabulary - Part 1.Terms for engine design and operation

GB/T 3821 Small and medium power internal combustion engines - Cleanliness limits and measurements

GB 3847 Limits and measurement methods for emissions form diesel vehicles under free acceleration and lugdown cycle

GB/T 6809 (All parts) Reciprocating internal combustion engines - Vocabulary of components and systems

GB 7258 Technical specifications for safety of power-driven vehicles operating on roads

GB/T 9969 General principles for preparation of instructions for use of industrial products

GB 14023 Vehicles, boats and internal combustion engines - Radio disturbance characteristics

- Limits and methods of measurement for the protection of off-board receivers

GB/T 14097 Reciprocating internal combustion engines - Limit values of emitted noise

GB 17691 Limits and measurement methods for emissions from diesel fuelled heavy-duty vehicles (China VI)

GB/T 17692 Measurement methods of net power for automotive engines and drive motor

GB/T 18297 Performance test code for road vehicle engines

GB 18352.6-2016 Limits and measurement methods for emissions from light-duty vehicles (CHINA 6)

GB/T 19055 Reliability test methods for motor vehicle engines

GB 19147 Automobile diesel fuels

GB/T 20651.1 Reciprocating internal combustion engines - Safety - Part 1.Compression ignition engines

QC/T 413 Basic technical requirements for automotive electric equipment

QC/T 484 Motor vehicle paint coating

QC/T 526 Automobile engine - Engineering approval evaluation program

QC/T 829 Technical specification for diesel vehicle after-treatment systems

QC/T 901 Quality inspection and assessment method for automobile engine products

3 Terms and Definitions

The terms and definitions defined in GB/T 1883.1, GB/T 6809 (all parts), GB/T 18297, and GB/T 19055 are applicable to this document.

4.1 General Requirements

4.1.1

Diesel engines and their parts shall be manufactured in accordance with product drawings and technical documents approved through the prescribed procedures, and shall comply

with the provisions of this document.

4.1.2

Diesel engine manufacturers (hereinafter referred to as the "manufacturers") shall provide the main parameters of the diesel engines listed in Appendix A in the technical documents.

4.1.3

Fuel shall comply with the provisions of GB 19147. The fuel used for emissions testing shall comply with the provisions of GB 17691. The manufacturer shall clearly specify the diesel fuel grade necessary to ensure the normal operation of the diesel engine.

4.1.4

The manufacturer shall specify the appropriate engine oil grade and standard, and stipulate the engine oil class, engine oil and filter replacement interval or mileage.

4.1.5

The manufacturer shall specify the loading application requirements as stipulated in 4.7.

4.1.6

Electrical equipment shall comply with the provisions of QC/T 413.

4.1.7

There shall be no air, water, or oil leaks in the off-line condition.

4.1.8

The appearance, assembly and adjustment quality, and cleanliness shall meet the requirements of the manufacturer's product drawings and technical documents.

4.1.9

The paint coating shall comply with the provisions of QC/T 484.

4.1.10

The manufacturer shall clarify the fault diagnosis instrument applicable to the diesel engine, and the interface, communication protocol, and input and output requirements of the electronic control module required by the complete vehicle.

4.1.11

The manufacturer shall provide the weight (mass) of the diesel engine according to customer needs.

4.2 Performance Requirements

4.2.1

The starting performance shall meet the "passing" requirements for diesel engine starting

performance rating in GB/T 18297. For special requirements, the supply and demand sides shall sign a separate technical agreement.

4.2.2

The idle speed fluctuation rate shall not be greater than 5% and shall meet the requirements for idle speed quality in GB/T 18297.

4.2.3

The fuel consumption rate tolerance at rated power shall meet the requirements of GB/T 18297; the minimum fuel consumption rate tolerance during the total power test shall meet the requirements of GB/T 18297.

4.2.4

The maximum net power and maximum net torque tolerances shall meet the requirements of GB/T 17692.

4.2.5

The steady state speed governing rate shall meet the requirements of the manufacturer's technical documents.

4.2.6

The oil-fuel consumption ratio under rated operating conditions shall meet the requirements of GB/T 19055.

4.2.7

The maximum piston air leakage under full load conditions shall meet the requirements of GB/T 19055.

4.2.8

The engine oil dilution rate shall meet the requirements of the manufacturer's technical documents.

4.2.9

The optimal thermal efficiency shall meet the requirements of the manufacturer's technical documents.

4.2.10

The exhaust aftertreatment system shall meet the requirements of the manufacturer's technical documents.

4.3 Conformity Requirements

The tolerances of rated power, maximum torque and minimum fuel consumption rate shall meet the requirements of GB/T 18297 during type inspection and production conformity