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

GB/T 21405-2008

**Reciprocating internal combustion engines -- Determination and
method for the measurement of engine power -- Additional
requirements for exhaust emission tests in accordance with ISO 8178
(English Translation)**

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Foreword

This standard is ISO engine power measurement standards in the "satellite" standards for engine emissions before the test to determine engine power.

This standard is developed in accordance with the relevant provisions from ISO/IEC Directives, Part 3.

This standard is identical with ISO 14396:2002 "and methods of measurement to determine the reciprocating internal combustion engine power ISO 8178 exhaust Additional requirements for emission tests "(in English).

This standard is equivalent to translate ISO 14396:2002.

For ease of use, this standard made the following editorial changes.

--- "This International Standard" by "this standard";

--- Remove the foreword to international standards;

--- The standard ISO 14396:2002 and other international standards referenced in our country who have been adopted as a standard by our standards on behalf of the for the corresponding international standards have not been adopted as our standard, still refer directly to international standards.

The standard proposed by China Machinery Industry Federation.

This standard by the National Standardization Technical Committee of the internal combustion engine.

This standard was drafted. Shanghai Institute of the internal combustion engine, Weichai Power Co., Ltd., Guangxi Yuchai Machinery Co., Ltd., Beiqi Fu Tian Automobile Co., Ltd., Shanghai Diesel Engine Co., Ltd. Ningbo Xuelong Group.

Introduction

This standard establishes the ISO engine power measurement standards in a standard satellite, to avoid the use of the standard in a given engine power Many specious ISO standards and identify areas of shortcomings of justice occurred. This standard uses the "core" - "satellite" principle.

GB/T 21404-2008 "core" common standard contains requirements for various engine applications, and this standard as a "satellite" standard it contains specific purpose engine power measurement and calibration as specified in Chapter 1 of the necessary requirements.

This standard is only used with the GB/T 21404-2008 "core" standards, in order to fully provide for specific engine applications requirements.

Therefore, the file "satellite" is not a standard that can exist alone, but through GB/T 21404-2008 "core" standards required to Seeking to form a complete standard.

To ensure ease of use, in the development of "core" standards and "Satellite" standard adopts a very similar structure.

The advantage of using this method is that it is reasonable to use the same or similar standards for engines for different purposes, and to ensure that the standard Made in quasi-coherent system, the revision process.

Compared with road engines, non-road engines Due to its versatility, it has a wide power range and numerous structures form.

GB/T 8190 the aim is to make non-road engine testing procedures of gaseous and particulate emissions of rationalization in order to simplify the hand Continued, more cost-effective to draft regulations for the engine specifications and to carry out the engine certification.

For this purpose a concept and uses. The power of the engine when equipped with only basic secondary slave device issued to Ratio calculation engine emissions ($\text{g/kW} \cdot \text{h}$).

GB/T 8190 has been used in legislation, regulations and regulatory agencies have different limits depending on the engine power. The standard gauge Given the need for determining

the engine power when in accordance with GB/T 8190 requirements for test procedures.

According to GB/T 8190 shall be calculated emission ratio, power measurement is not corrected based on the value, because the engine emissions with the environmental Availability varies, but not being able to correct for this measurement. Accordingly, the scope of this standard will allow the provisions of the environmental situation is very small, in order to it will minimize its impact.

Power correction program of the present standard to meet environmental test conditions and wide use, can be used to carry out before the engine emission testing to determine hair Motive power.

GB/T 21405-2008/ISO 14396:2002 Reciprocating internal combustion engine power determined and methods of measurement of exhaust emission tests Additional requirements

1 Scope

This standard specifies the basic requirements to meet in GB/T 21404-2008 "core" standards determined in accordance with the GB/T 8190 regulations We need to identify additional requirements for reciprocating internal combustion (RIC) and the power of the methods set exhaust emission tests.

This standard also provides for determining the pre-adjustment of the engine at a variable atmospheric conditions power correction method. The Amendment Act does not apply to determine exhaust Pollutant emission values, because it is only with the engine power is not corrected at all the relevant circumstances.

This standard applies to land use, marine and rail traction reciprocating internal combustion engine, but does not include mainly used for road vehicle engines. This standard Suitable for driving, such as machinery, earthmoving machinery, industrial trucks and other road engine applications.

This standard is a "satellite" standard, only for use with GB/T 21404-2008 "core" standards, in order to fully provide for specific uses hair Motivation technical requirements.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 21404-2008 and measuring methods for determining internal combustion engine power - General requirements (ISO 15550:2002, IDT) ISO 3104:1994 Petroleum products -

Transparent and opaque liquids oil kinematic viscosity measurement and calculation of dynamic viscosity ISO 3675:1998 Crude petroleum and liquid petroleum products - Laboratory determination of density of petroleum hydrometer method ISO 5164:1990 Automotive fuels - Determination of knock characteristics research method ISO 5165:1998 Petroleum products - Determination of the ignition of diesel cetane method ASTM D240-00 using bomb calorimeter Standard Test Method for Heat of Combustion of Liquid Hydrocarbon measurement values Standard Test Method for aviation fuel LHV ASTM D3338-00 estimate

3 Terms and Definitions

The standard terms and definitions GB/T 21404-2008 given in Table 1.

Table 1

the term

definition

(GB/T 21404-2008 provisions of resolution) Engine rated speed 3.2.4 Middle engine speed calibration 3.2.5

3.3.1 Rated power

Engine adjustment 3.2.1 According to GB/T 8190 to determine the engine power 3.3.3.3

Engine speed 3.2.3 GB/T 21405-2008/ISO 14396:2002