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

GB/T 21406-2008

**Internal combustion engines -- Engine weight (mass)
declaration**

内燃机 发动机的重量（质量）标定

(English Translation)

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Foreword

This standard is identical with ISO 21006:2006 "internal combustion engine weight (mass) calibration" (in English).

This standard is equivalent to translate ISO 21006:2006.

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

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

--- Deleted international standards foreword;

--- The standard ISO 21006:2006 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; our country has not been adopted as a standard, still refer directly to international standards.

Appendix A of this standard is a normative appendix.

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. Changzhou AMEC Machinery Co., Ltd., Shanghai Internal Combustion Engine Research Institute, Ningbo Xuelong Group Co., Ltd., Guangxi Yuchai Machinery Co., Ltd., Shanghai Diesel Engine Co., Ltd.

Introduction

This standard is intended to help the manufacturer of the internal combustion engine weight (mass) for calibration.

This standard may be used.

a) and by ISO "core" - "Satellite" principle developed standards relating to the engine power (for example. GB/T 21405-2008, GB/T 6072.1) together to form a complete standard.

Note: GB/T 21404-2008 for the "core" standards, including the common requirements for various engine applications.

b) a separate standard text.

GB/T 6072.1 and GB/T 21405-2008 has been published as a "satellite" standard.

The new version of ISO 1585, ISO 2288, ISO 2534, ISO 8665, ISO 9249 and ISO 4106 as a "satellite" standard, are also ISO "core" - "satellite" system family of standards.

In the field of science and technology, in a particular frame of reference, a weight of the object means that the objects produce the equivalent of a free fall added to the frame of reference Force speed (see ISO 31-3:1992,3-9.2). IU weight parameters specified in this method is the Newton (N).

But in the commercial and daily life, especially in layman's terms, the weight is generally used as a synonym for quality. In this sense, the Parameter international weight units in kilograms (kg), while the verb "weigh" means "measuring the weight." Therefore, often be the difference between weight and mass of confusion between. Weight is the gravitational field force acting on the object with the degree to Newton Quantity, and quality is the amount of substance contained in the object, in kilograms (kg) to measure.

According to Newton's second law of motion.

$$F = k m_1 \text{ Rao (1)}$$

For a particular frame of reference (such as the Earth), you can select the unit, so that $k = 1$. In this case, the equation becomes.

$$F = m_1 \text{ Rao (2)}$$

Where.

F --- the force applied to an object, in units of bovine (N);

M1 --- quality of the object, in kilograms (kg);

Rao --- (gravity) acceleration in meters per second squared ($\text{m} \cdot \text{s}^{-2}$).

Thus, according to Newton's second law, by the equation (2) the weight and quality of the direct link.

Where.

--- Weight of the object in units of bovine (N);

M1 --- quality of the object, in kilograms (kg);

GB/T 21406-2008/ISO 21006:2006 Internal combustion engine weight (mass) Calibration

1 Scope

This standard specifies the internal combustion engine weight (mass) calibration method.

Terms used in this standard is equivalent to the weight of direct mass noun.

This standard applies to.

a) reciprocating internal combustion (RIC) engine (spark-ignition or compression-ignition engines) but excluding free-piston engines;

b) rotary piston engine;

These engines may be naturally aspirated engine or mechanical supercharger or turbocharger supercharged engine.

This standard applies to the following purposes engine.

c) land use, rail traction and ship;

d) Vehicle;

e) drive (or powered) non-road mobile machinery;

f) for motorcycle;

g) agricultural tractors and agricultural machinery driving;

h) ISO 6165 standard defined earthmoving machinery;

i) the total length does not exceed 24m yachts and other small ships.

This standard also applies to road construction machinery, industrial trucks, and there is no other appropriate use criteria used by the engine.

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 6165:2001 Earth - moving machinery - Basic types of vocabulary

3 Terms and Definitions

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

4 Symbol

Engine weight (mass) symbols EW, in kilograms (kg).

Note: You can also use the International System of Units and other symbols and footnotes in GB/T 21404-2008 use.

5 Engine weight (mass) Calibration

The engine manufacturer shall be responsible for determining engine weight (mass) method.

One of the following two methods should be used to calibrate the engine weight (mass).

a) engine weight (mass) is the sum of all the parts of the engine and the weight (mass) additional auxiliary devices fitted to the customer Except liquid household provides.

Calibration Engine weight (mass), the implementation of standards should be indicated as follows.

EW (GB/T 21406-2008) =... kg GB/T 21406-2008/ISO 21006:2006