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

GB/T 1883.1-2025

Replacing GB/T 1883.1-2005

**Reciprocating internal combustion engines - Vocabulary - Part
1: Terms for engine design and operation**

往复式内燃机 词汇 第1部分：发动机设计和运行术语

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 1 of GB/T 1883, "Glossary of Reciprocating Internal Combustion Engines". GB/T 1883 has already published the following parts.

---Part 1: Engine Design and Operation Terminology;

---Part 2: Engine Repair Terminology this document replaces GB/T 1883.1-2005 "Glossary of Reciprocating Internal Combustion Engines Part 1: Engine Design and Operation Terminology", and is consistent with...

Compared with GB/T 1883.1-2005, apart from structural adjustments and editorial changes, the main technical changes are as follows.

- a) The terms "rotary engine," "speed fluctuation coefficient," and "post-compression temperature" and their definitions have been added (see 3.1.2, 3.10.1.6, and 3.15.2.1);
- b) The definition of compression ignition engines has been changed (see 3.2.1, 3.1 and 4.1.1 in the 2005 edition);
- c) The terms "external ignition engine" and "dual-fuel engine" and their definitions have been deleted (see 3.3 and 4.3 of the 2005 edition);
- d) The definitions of three reciprocating internal combustion engines classified by fuel type have been revised (see 3.3.1.1, 3.3.2, and 3.3.2.1, 2005 edition).
4.1.1, 4.2, 4.2.1);
- e) Change the term "insulated engine" to "thermal-resistant engine" (see 3.4.3, 5.3 in the 2005 edition);
- f) Twelve new terms and definitions related to the work cycle have been added (see 3.6.1.2~3.6.1.8, 3.6.4.1~3.6.4.5);
- g) Four new terms and definitions related to ventilation have been added (see 3.7.3.1, 3.7.4.2.4, 3.7.5.20, and 3.7.5.21);
- h) Seventeen terms and definitions related to the combustion chamber have been added (see 3.8.8~3.8.24);
- i) The definition of mean effective pressure has been changed (see 3.12.2.1, 13.2.1 in the 2005 edition);
- j) Fourteen new terms and definitions related to power have been added (see 3.12.2.3, 3.12.5.1~3.12.5.5, 3.12.8~3.12.15);
- k) Four new terms and definitions related to consumption have been added (see 3.13.2.1, 3.13.2.2, 3.13.6.1, and 3.13.6.2);
- l) Three terms and definitions related to cylinder arrangement have been added (see 3.17.18~3.17.20);

m) Eight new terms and definitions related to operations have been added (see 3.19.1 to 3.19.8);

n) A schematic diagram of the thermodynamic cycle has been added (see Figure 1);

o) A scavenging diagram for a two-stroke engine has been added (see Figure 2);

p) A comparison chart of conventional cycle internal combustion engines and Miller cycle internal combustion engines has been added (see Figure 3);

q) An example diagram of the indicator diagram for a four-stroke diesel engine has been added (see Figure 4).

This document is equivalent to ISO 2710-1:2017 "Reciprocating internal combustion engines - Vocabulary - Part 1: Engine design and operation terminology".

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Machinery Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Standardization of Internal Combustion Engines (SAC/TC177).

Introduction

Reciprocating internal combustion engines are widely used in various power machinery. To better promote trade, exchange, and technological cooperation, the International Organization for Standardization (ISO)...

The ISO has published and developed several terminology standards, which my country has adopted simultaneously, including those for reciprocating internal combustion engine components and systems.

Terminology standard GB/T 6809 (ISO 7967), terminology standard GB/T 1883 (ISO 2710) for the design and use of reciprocating internal combustion engines.

Meanwhile, in technical standards such as GB/T 21404 (ISO 15550), GB/T 21405 (ISO 14396), and GB/T 6072 (ISO 3046)...

The terminology related to the performance of reciprocating internal combustion engines has been defined.

GB/T 1883, "Glossary of Terms for Reciprocating Internal Combustion Engines," aims to establish a standardized document universally applicable to the design, operation, and maintenance of reciprocating internal combustion engines.

The terminology used is equivalent to ISO 2710. Depending on the stage of the reciprocating internal combustion engine, it consists of two parts.

---Part 1: Engine Design and Operation Terminology. The purpose is to define the basic terminology for the design and operation of reciprocating internal combustion engines.

---Part 2: Engine Repair Terminology. The purpose is to define the terminology related to the characteristics of engines and their components and repair activities, providing...

The document outlines terminology categorized by intended use and describes the faults leading to engine repair, along with the corresponding measures and procedures.

definition.

Reciprocating internal combustion engine vocabulary Part 1: Engine Design and Operating Terminology

1 Scope

This document defines the basic terminology related to the design and operation of reciprocating internal combustion engines.

In addition, the terminology for reciprocating internal combustion engine components and systems follows the definitions in ISO 7967, while the performance of reciprocating internal combustion engines follows the definitions in ISO 7967.

Definitions of ISO 15550, ISO 14396, and ISO 3046.

2 Normative references

This document has no normative references.

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 General Terminology

3.1.1

Fuel is burned in one or more cylinders, driving the piston to reciprocate, converting the chemical energy of the fuel into mechanical work and outputting it to the shaft.

Mechanical devices that generate power.

Note: When this device does not output shaft power but outputs power in the form of high-temperature gas, it is called a "free piston generator".

3.1.2

rotary engine

An internal combustion engine with a rotor that moves eccentrically around the engine axis,